South Bakersfield 8-Lane Project

On State Route 99 from State Route 119
to the Wilson Road Overcrossing in Kern County, California

6-KER-99-PM 17.0/22.1
EA 06-0G830
Project ID: 0600020165
SCH No.: 2011051048

Initial Study with Mitigated Negative Declaration

Prepared by the

State of California Department of Transportation

July 2011

Caltrans

General Information about This Document

What's in this document?

This document contains a Mitigated Negative Declaration that examines the environmental effects of a proposed project on State Route 99 in Kern County.

The Initial Study and proposed Mitigated Negative Declaration were circulated to the public from May 17, 2011 to June 15, 2011. Comment letters were received on the draft document. Responses to the circulated document are shown in the Comments and Responses section of this document, added since the draft document. Throughout this document, a vertical line in the margin indicates a change made since the draft document circulation.

What happens after this?

The proposed project completed environmental compliance after the circulation of this document. When funding is approved, Caltrans, as assigned by the Federal Highway Administration, would design and construct all or part of the project.

For individuals with sensory disabilities, this document is available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Kirsten Helton, San Joaquin Valley Environmental Analysis, 855 M Street, Suite 200, Fresno, CA 93721; 559-445-6479 for Voice; or use the California Relay Service TTY number, 1-800-375-2929 or dial 711.

SCH#:2011051048
06-KERN-99-PM 17.0/22.1
EA: 06-0G8300
ID: 0600020165

Improve traffic operations on State Route 99 between State Route 119 and the Wilson Road overcrossing in the city of Bakersfield (post mile 17.0 to post mile 22.1) by constructing one lane in each direction.

INITIAL STUDY
with Mitigated Negative Declaration

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

7/27/11
Date of Approval

Jennifer Taylor
Office Chief, Central Region
Environmental South
California Department of Transportation

Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to widen State Route 99 between the State Route 119 and the Wilson Road overcrossing in Kern County, California. The project would widen State Route 99 from six to eight lanes by adding one lane in each direction. Concrete barriers would be built in the median. In addition, the project would widen two existing bridges in the median: Pacheco Road undercrossing (Bridge 50-0241 R/L) and South Bakersfield Overhead (Bridge 50-0242 R/L) over the Burlington Northern Santa Fe Railway. All work would take place within the existing state right-of-way.

Determination

Caltrans prepared an Initial Study for this project and following public review determined that the project would not have a significant effect on the environment:

The project would have no effect on land use; growth; farmlands; community impacts; emergency services; forest; mineral resources; utilities; hydrology and floodplain; water quality; geology/soils/seismic/topography; cultural resources; paleontology; natural communities; wetlands and other waters; plant species; and invasive species.

In addition, the project would have no significant effect on air quality; traffic and transportation/bicycle and pedestrian facilities; noise; hazardous waste or materials; and visual or aesthetics issues.

In addition, the project would have no significantly adverse effect on animal species—threatened or endangered—because the following mitigation measures would reduce potential effects to insignificance:

- Use wildlife crossings in the project for San Joaquin kit fox to cross State Route 99.
- Use kit fox avoidance practices during construction, including worker education.
- Limit construction to daylight hours.

Jennifer Taylor
Office Chief, Central Region
Environmental South
California Department of Transportation

7/27/11
Date

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List of Abbreviated Terms

Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
FHWA	Federal Highway Administration
NEPA	National Environmental Policy Act
PM	post mile
USFWS	United States Fish and Wildlife Service
dBA	A-weighted decibels
NOx	nitrogen oxides
O_3	ozone
PM_{10}	inhalable particulate matter
$PM_{2.5}$	fine particulate matter
Ppm	parts per million

Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) proposes to improve traffic operations on State Route 99 between State Route 119 and Wilson Road in Kern County (post miles 17.0 to 22.1). Within the project limits, State Route 99 is an urban six-lane divided highway (see Figures 1-1 and 1-2). Currently, the project limits serve as a link between two urban highways, with traffic attempting to divert from one highway to another while through-traffic attempts to maintain highway speeds. The mix of traffic from State Route 119 and State Route 99 leads to peak-hour congestion as motorists attempt to find and maintain a position in a lane that leads to their destination.

The project would widen State Route 99 from three to four lanes in each direction. Traffic operations would be improved, traffic congestion would be reduced, and traffic safety would be enhanced. In addition, two bridge structures within the project limits, the Pacheco Road Undercrossing and the South Bakersfield Overcrossing that spans the Burlington Northern Santa Fe Railway, would be widened. All work would be within the existing state right-of-way.

Regionally, State Route 99 and State Route 119 serve commuter traffic, recreational traffic, and commercial truck traffic traveling to points north and south, as well as destinations east and west such as mountain and coastal recreational areas.

Because the project includes federal permits and could include federal funding, a National Environmental Policy Act Categorical Exclusion would be prepared after circulation of and public comment on this document

The project was programmed in the 2010 State Highway Operation and Protection Program cycle and is included in Proposition-1B for State Route 99. The project is also listed in the 2011 Kern County Council of Governments' Regional Transportation Plan.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the project is to improve traffic operations and reduce congestion on State Route 99 between Wilson Road and Panama Road (State Route 119) in Kern County.

1.2.2 Need

State Route 99 is a critical component in the transportation infrastructure of the Bakersfield metropolitan area and nearby developing communities. State Route 99 through urban Bakersfield is an eight-lane highway except for the six-lane stretch within the project limits (Another project farther north is also being widened from six lanes to eight lanes.).

This portion of State Route 99 is increasingly congested, a trend that can be expected to continue as the population of the area increases (see Figure 1-3). The anticipated growth in the greater Bakersfield area requires additional traffic capacity, reduced traffic congestion, and improved traffic operations on this six-lane portion of State Route 99. The Kern County Council of Governments estimates the population in Kern County would increase from 765,190 in 2005 to 1.7 million by 2050. As the population grows, the number of vehicles using State Route 99 is also likely to increase.

1.2.2.1 Congestion and Traffic Operations

A traffic forecast analysis was prepared between May 4, 2010 and August 17, 2010. The traffic analysis was performed for the existing conditions (2010), the construction-year conditions (2015), and the design-year conditions (2035), with and without a project. The existing State Route 99 transition from eight lanes to six lanes is creating a bottleneck for southbound traffic just north of the Wilson Road overcrossing (post mile 22.1). The narrowing of the freeway causes difficulty for motorists trying to negotiate traffic at the interchange with White Lane where current traffic flow has increased beyond what the existing six-lane highway can handle. The number of vehicles merging between State Route 99 and State Route 119 is substantial, and the space available for them to complete their weaving and merging is limited.

The 2009 annual average-daily traffic for this portion of State Route 99 was estimated at 112,000 vehicles. The annual average daily traffic is estimated to be 149,736 vehicles by 2015 and 203,318 vehicles by 2035.

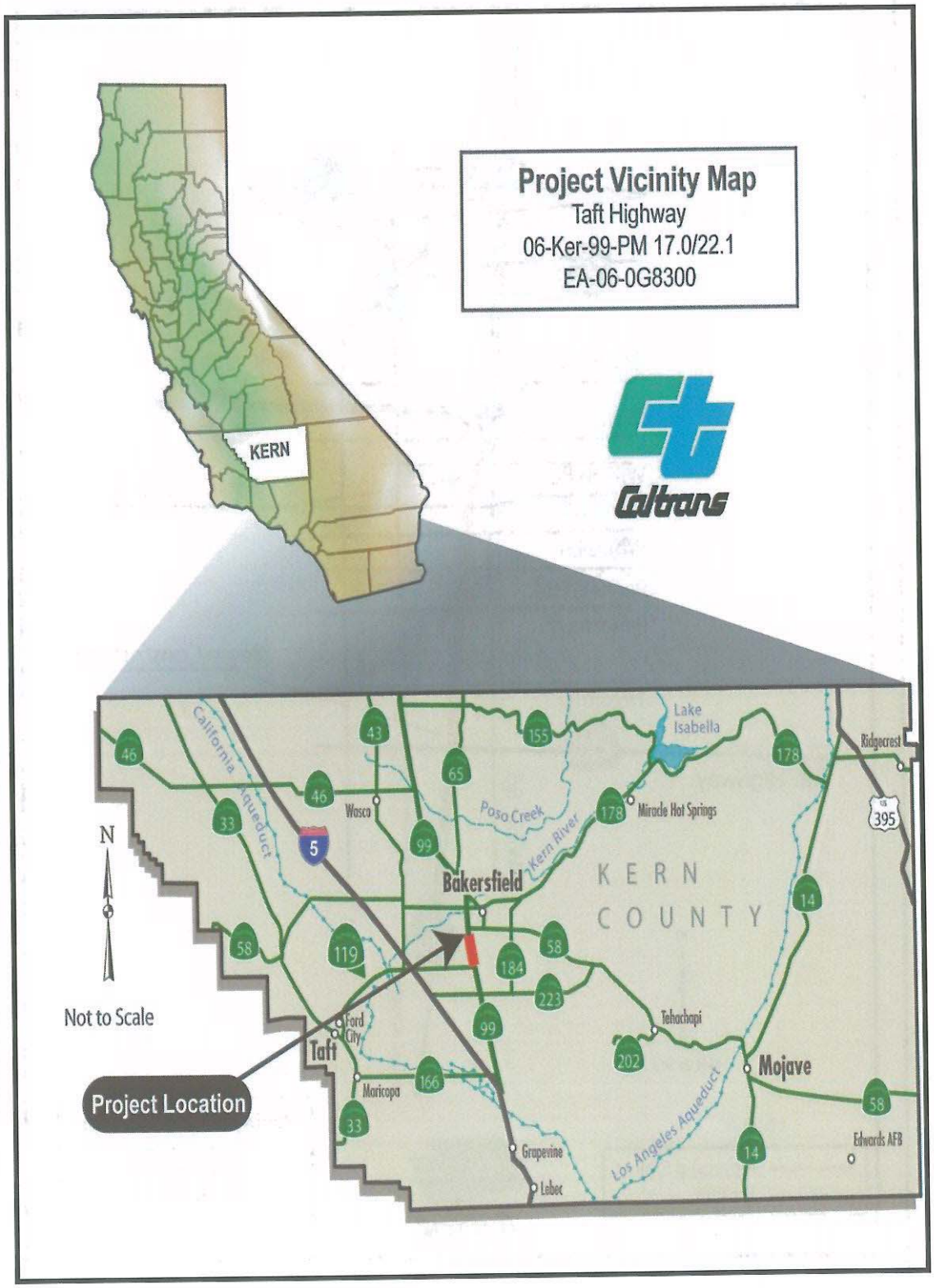


Figure 1-1 Project Vicinity Map

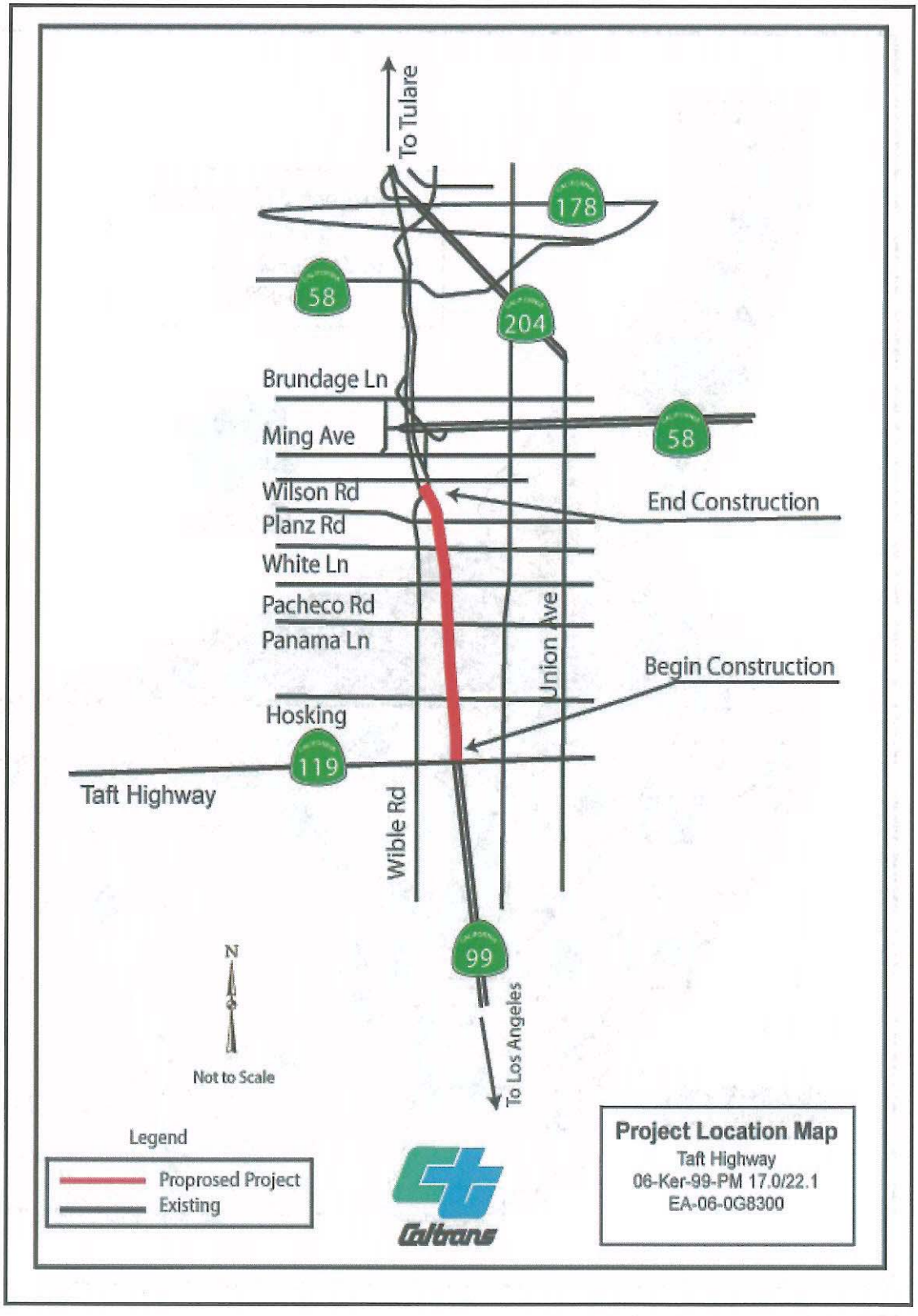


Figure 1-2 Project Location Map

Levels of service describe the operating conditions a motorist would experience while traveling on a highway or surface streets. This rating system ranges from "A" to "F" with "A" representing free-flowing traffic and "F" indicating traffic with heavy congestion, or stop-and-go traffic (see Figure 1-3).

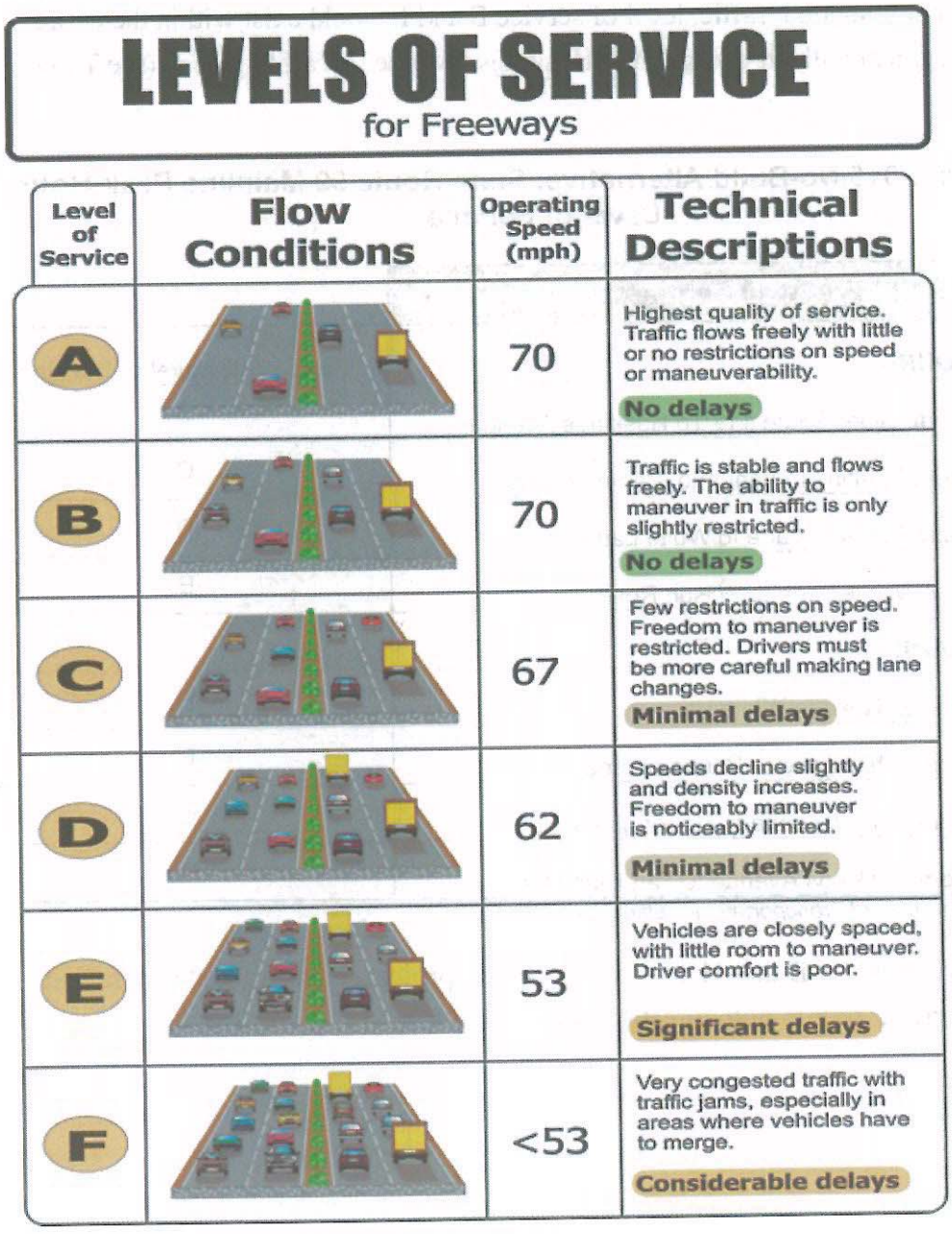


Figure 1-3 Levels of Service

The traffic operation analysis conducted for this stretch of State Route 99 shows the following condition under the No-Build Alternative: for the year 2015, the level of service for northbound traffic would be reduced to level of service E between White Lane and Wilson Road and level of service D between Panama Lane and White Lane. For southbound traffic, level of service E and F would exist within the entire project segment with an exception at Hoskings Avenue to Taft Highway (see Table 1.1).

Table 1.1 2015 No-Build Alternative, State Route 99 Mainline Peak-Hour Level of Service

Freeway Segment	
NORTHBOUND	**Peak-Hour Level of Service**
Mainline from State Route 119 To Hoskings Avenue	C
Mainline from Hoskings Avenue to Panama Lane	C
Mainline from Panama Lane to White Lane	D
Mainline from White Lane to Wilson Road	E
SOUTHBOUND	
Mainline Wilson Road to White Lane	F
Mainline from White Lane to Panama Lane	F
Mainline from Panama Lane to Hoskings Avenue	E
Mainline from Hoskings Avenue to Taft Highway	D

Source: Department of Transportation-Traffic Study, 2011

By 2035, with the No-Build Alternative, the entire project segment would operate at level of service E or F in both directions (see Table 1.2).

Table 1.2 2035 No-Build Alternative, State Route 99 Mainline Peak-Hour Level of Service

Freeway Segment	Peak-Hour Level of Service
NORTHBOUND	
Mainline from State Route 119 To Hoskings Avenue	E
Mainline from Hoskings Avenue to Panama Lane	F
Mainline from Panama Lane to White Lane	F
Mainline from White Lane to Wilson Road	F
SOUTHBOUND	
Mainline Wilson Road to White Lane	F
Mainline from White Lane to Panama Lane	F
Mainline from Panama Lane to Hoskings Avenue	E
Mainline from Hoskings Avenue to Taft Highway	D

Source: Department of Transportation-Traffic Study, 2011

1.3 Alternatives

There are two alternatives under consideration, a Build Alternative and the No-Build Alternative. The following section describes the proposed action and the design alternatives that were developed by a multi-disciplinary team to achieve the project purpose and need while avoiding and minimizing environmental impacts.

1.3.1 Build Alternative

The Build Alternative proposes two continuously reinforced, 12-foot-wide concrete lanes to be built in the median, one in each direction. One 10-foot-wide inside shoulder would be built in each direction, separated by a concrete median barrier. The concrete median barrier would be designed with openings to allow San Joaquin Valley kit fox to cross the highway.

All construction work would be contained within the median. Oleander bushes now in the median would be removed throughout the length of the project.

In addition, the improvement work would include widening of two bridge structures within the project limits: Pacheco Road undercrossing (Bridge 50-0241 R/L) and South Bakersfield Overhead (Bridge 50-0242 R/L) over Burlington Northern Santa Fe Railway. All work would be done within the existing state right-of-way.

The estimated capital construction cost of the Build Alternative for the 2012- 2013 fiscal year is $33.4 million.

1.3.2 No-Build Alternative

The No-Build Alternative would keep the project segment of State Route 99 in its current condition as a six-lane highway. Bridges would not be modified. The No-Build Alternative does not meet the purpose and need for the project; traffic congestion would not improve and traffic operations would become worse as more vehicles weave and merge. Rear-end and weaving-related collisions would not be reduced.

1.3.3 Comparison of Alternatives

Criteria considered in evaluating the project alternatives include the project purpose and need objectives, potential environmental factors, congestion relief, and improved safety and traffic operations (see Table 1.4).

Table 1.4 Comparison of Alternatives

Evaluation Criteria	Build	No-Build Alternative
Meets purpose and need	Yes	No
Improves traffic operations and enhances safety	Yes, widens the mainline	Provides no improvement to traffic operations or safety
Minimizes environmental impacts	Noise level would increase; however, a sound wall is not reasonable due to excess cost.	No effect on the environment
Reduces congestion	Improvement to level of service D or better for the 20-year design period	Provides no reduction in congestion
Biology	Impacts to San Joaquin Kit fox habitat and burrowing owls	No effect on animal species
Visual	Impacts to existing visual quality	No change in the existing visual quality.

After the public circulation period, all comments would be considered, and Caltrans would select a preferred alternative and make the final determination of the project's effect on the environment. In accordance with the California Environmental Quality Act, if no immitigable significant adverse impacts are identified, Caltrans will prepare a Negative Declaration or Mitigated Negative Declaration. Similarly, if Caltrans determines the action does not significantly impact the environment, Caltrans, as

assigned by the Federal Highway Administration, would issue a Categorical Exclusion in accordance with the National Environmental Policy Act.

1.3.4 Identification of a Preferred Alternative

On June 28, 2011 Caltrans has identified the Build Alternative as the preferred alternative because it has the greatest project benefits with regard to any associated impacts. In recommending the Build Alternative as the preferred alternative, the following issues were considered:

- The Build Alternative would improve the level of service to D or better for the 20-year design period.
- The U.S. Fish and Wildlife Service concurred on June 17, 2011 that the project is not likely to adversely affect San Joaquin Kit fox habitat.
- The City of Bakersfield fully supports the Build Alternative improvement that would provide the traveling public with congestion relief.
- The Build Alternative would meet the project's purpose and need by improving traffic operations and reducing congestion; the No-Build Alternative would not.

1.3.5 Alternative Considered but Eliminated from Further Discussion

Alternative 2 (widen to outside) was considered and withdrawn during the project development process because it would result in excessive construction cost, excessive right-of-way acquisition, and increased environmental impacts. Outside widening would require the acquisition of significant right-of-way, major reconstruction to each interchange within the project limits, and structure replacement of local road overcrossings. The existing roadbed would not be rehabilitated. The estimated total project cost for this alternative is $130 million. Environmental impacts of Alternative 2 would include displaced and relocated residential and commercial properties on both sides of the highway, the potential to encounter hazardous waste material sites, and costly mitigation. Alternative 2 was eliminated from consideration because of limited funding, right-of-way requirements, and needed structure replacement.

1.4 Permits and Approvals Needed

The following permits, reviews, and approvals are required for project construction:

Agency	Permit/Approval	Status
United States Fish and Wildlife Service	Concurrence is being requested that the proposed project is not likely to adversely affect San Joaquin Kit Fox.	The concurrence-of-determination letter was received from the U.S. Fish and Wildlife Service on June 17, 2011.

Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

This chapter explains the impacts that the project would have on the human, physical, and biological environments in the project area. It describes the existing environment that could be affected by the project, potential impacts from each of the alternatives, and proposed avoidance, minimization, and/or mitigation measures. Any indirect impacts are included in the general impacts analysis and discussions that follow.

As part of the scoping and environmental analysis conducted for the project, the following environmental issues were considered, but no adverse impacts were identified. Consequently, there is no further discussion regarding these issues in this document.

- Coastal Zone–The project is not within a designated coastal zone.
- Wild/Scenic Rivers–No rivers classified as wild and scenic are in the proposed project limits.
- Parks and Recreation–No parks or recreation facilities were identified in the proposed project limits (Field Visit, November 30, 2010).
- Cultural Resource–No cultural resources were identified in the project (Historic Property Survey Report, March 30, 2011).
- Farmlands/Timberlands–No timberland is in the project area. Agricultural land lies adjacent to the project; however, no right-of-way would be acquired for the project.
- Community Impacts–The project, because it is an operational improvement project on an existing highway, would not disrupt the community character or cohesion or result in any relocation of businesses or residences. In addition, no minority or low income populations have been identified that would be adversely affected by the project, as determined above. Therefore, this project is not subject to the provisions of Executive Order 12898.
- Hydrology and Floodplain–The project is not in a 100-year-flood hazard vicinity; the groundwater table is more than 100 feet below ground surface within the project limits, and local hydrology would not be affected. (Water Quality Technical Report, January
- 18, 2011; Location Hydraulics Study Memorandum, November 2010).

- Water Quality and Storm Water Runoff–With the incorporation of best management practices and accepted engineering practices, the project would not have adverse effects on surface or groundwater runoff. This project would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities (Hydraulics Study Memorandum, November 2010 and Water Quality Report, January 18, 2011).
- Geology/Soils/Seismic/Topography–No significant potential exists for liquefaction during an earthquake. No known faults thrust toward or pass directly through the project site. Therefore, an insignificant chance exists for surface rupture at the site due to fault movement (Preliminary Foundation Investigation for Structures for State Route 99, December 2010).
- Paleontology–Because excavation would be shallow and in areas previously disturbed by residential development, it is unlikely that significant paleontological resources would be encountered. (Paleontological Identification Report, November 11, 2010).
- Natural Communities–No impacts to natural communities are anticipated since the existing median was previously disturbed within the project construction area (Natural Environmental Study, February 2011).
- Wetlands and other Waters–The project is not located within a wetlands area or near other waters of significance (Natural Environment Study, February 2011).
- Plant Species–No impacts to special-status plant species are anticipated since the proposed construction work is within the existing median and no new right-of-way would be acquired (Natural Environmental Study, February 2011).
- Invasive Species–No invasive species have been identified within the project limits that have special regulations or requirements based on their status on either the Federal or California Noxious Weeds list, unless the invasive species are in a nursery setting (Natural Environment Study, February 2011).

2.1 Human Environment

2.1.1 Land Use

2.1.1.1 Existing and Future Land Use

Affected Environment

This section discusses impacts to land use as a result of implementation of the proposed project. There is active agricultural land area around post mile 17 to the north of the project study area. Most commercial establishments are concentrated parallel with State Route 99 from Wilson Road to State Route 119. At Panama Lane, commercial uses are newly

developed fast-food chains, hotels, gas stations, and big-box retail outlets. Older commercial buildings such as small ethnic stores toward State Route 119 are less well-maintained. The majority of land use in the center of the project study area is residential and commercial. The residential developments are comprised of new, single-family homes with soundwalls surrounding the frontage road. Also found throughout the project study area are vacant or abandoned parcels.

Environmental Consequences

The proposed project does not require the acquisition of any additional right-of-way.

Avoidance, Minimization, and/or Mitigation Measures

Since the project does not require any zoning changes or the acquisition of additional right-of-way, the project does not conflict with the land use goals and policies of the 2002 Metropolitan Bakersfield General Plan or other applicable environmental plans and policies. Therefore, no mitigation would be required.

2.1.1.2 Consistency with State, Regional, and Local Plans

Affected Environment

Current adopted plans that guide development within the study area include the 2002 Metropolitan Bakersfield General Plan, the State Route 99 Corridor Enhancement Master Plan, the Metropolitan Bakersfield Habitat Conservation Plan, final 2007 Destination 2030 Regional Transportation Plan and the 2011 Federal Transportation Improvement Program. This project would be consistent with the State Route 99 Corridor Enhancement Master Plan because the project would unify freeway improvements, relieve congestion, improve the movement of goods, and enhance economic development of the San Joaquin Valley.

The December 2002 Metropolitan Bakersfield General Plan does not include the proposed project; however, it states that various planned improvements surrounding State Route 99 and nearby freeways would be needed for local and regional development. The proposed project would adopt the Metropolitan Bakersfield General Plan's goals, policies, and implementation strategies affecting transportation in the area. The Circulation Element also requires that overcrossings be designed to be compatible with bicycle travel.

The Regional Transportation Plan and Federal Transportation Improvement Program have included the proposed project in the Kern Council of Governments' 2011 Regional Transportation Plan. The project is also included in the amendment to the Federal Transportation Improvement Program approved on December 14, 2010. This project has undergone a regional level air quality conformity analysis to ensure that this project contributes to the region's compliance with state and federal air quality regulations.

Environmental Consequences

The proposed project does not conflict with any of the local or regional plans, there are no environmental consequences.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required.

2.1.1.3 Growth

Regulatory Setting

The Council on Environmental Quality regulations, which established the steps necessary to comply with the National Environmental Policy Act of 1969, requires evaluation of the potential environmental consequences of all proposed federal activities and programs. This provision includes a requirement to examine indirect consequences, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The Council on Environmental Quality regulations, 40 Code of Federal Regulations 1508.8, refer to these consequences as secondary impacts. Secondary impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

The California Environmental Quality Act also requires the analysis of a project's potential to induce growth. The California Environmental Quality Act guidelines, Section 15126.2(d), require that environmental documents "...discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment...."

Affected Environment

Refer to Section 2.1.1 Land Use for information on local plans and policies that control growth in the project limits. Kern County's population has grown at a moderate, steady pace in recent years. According to the United States Census Bureau, the county's population was 543,477 in 1990, 661,645 in 2000 and 871,728 in 2010, an annual growth rate of almost 6.6 percent. In contrast, statewide population growth averaged 1.84 percent over the same period. In 2007, the California Department of Finance projected a population of 1,086,113 by 2020 for Kern County. Much of Kern County's recent growth has occurred in Bakersfield. The city's population increased from 174,820 in 1990 to 247,057 in 2000, an average annual growth rate of 6 percent. As shown in Table 2.1, if the population grows at the historically supportable rate of 6 percent during the coming decade, Bakersfield will be home to 795,323 people by 2020.

Table 2.1 Historic, Existing, and Projected Population Growth in California, Kern County and Bakersfield.

Area of Concern	1990	2000	2010	2020	Average Annual Growth Rate 1990 - 2020
California	29,760,021	33,871,648	39,958,000	45,449,000	1.4%
Kern County	543,477	661,645	871,728	1,086,113	2.3%
Bakersfield	174,820	247,057	444,104	795,323	6.0%

Source: United States Census

Environmental Consequences

The urban development boundaries in Bakersfield's general plan are linked to population growth projections and development levels in the city and are anticipated to provide adequate quantities of land for development through 2020. The proposed project does not open any new area to development or encourage unplanned development southward along the State Route 99 corridor.

Avoidance, Minimization, and/or Mitigation Measures

No impacts are expected; therefore, no mitigation is required

2.1.1.4 Traffic and Transportation/Pedestrain and Bicycle Facilities

Regulatory Setting

Caltrans, as assigned by the Federal Highway Administration, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 CFR 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

Caltrans is committed to carrying out the 1990 Americans with Disabilities Act by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public would be provided to persons with disabilities.

Affected Environment

A Traffic Operation Analysis was prepared in September 2010 and additional forecast traffic data was provided in November 2010. State Routes 99, 119 and 58 serve as routes for commuter traffic and vehicles traveling to recreation destinations in the cities of Bakersfield, Taft, Barstow and both northern and southern California. The routes also connect rural towns such as Dustin Acres, Fuller Acres, Lamont and the surrounding rural communities.

The 2009 average daily traffic for this portion of State Route 99 is estimated at 112,000 vehicles. The existing operational analysis indicates the northbound State Route 99 mainline from White Lane to Wilson Road operates at level of service D during morning and afternoon peak hours. Southbound State Route 99 mainline from Wilson Road to White Lane operates at level of service C during morning and level of service D during afternoon peak hours.

Table 2.2 shows the existing level of service conditions for the mainline. The north- and southbound White Lane and Wilson Road interchanges operate at unacceptable levels of service during the morning and afternoon peak traffic periods.

Table 2.2 Existing State Route 99 Mainline Level of Service Summary

Freeway Segment	Existing 2009	
	Morning Peak Level of Service	Afternoon Peak Level of Service
NORTHBOUND		
Mainline from State Route 119 To Hoskings Avenue	A	B
Mainline from Hoskings Avenue to Panama Lane	A	B
Mainline from Panama Lane to White Lane	C	C
Mainline from White Lane to Wilson Road	D	D
SOUTHBOUND		
Mainline Wilson Road to White Lane	C	D
Mainline from White Lane to Panama Lane	B	C
Mainline from Panama Lane to Hoskings Avenue	A	B
Mainline from Hoskings Avenue to State Route 119	A	B

Source: Department of Transportation Traffic Study, 2011

The accident history within the project limits for the most recent three-year study period (April 1, 2006 to March 31, 2009) reported that the actual traffic accident rate is 0.01 percent higher than the statewide average rate. It is anticipated that without the project, the accident rate in the project area would increase as traffic demands grow in the future.

Environmental Consequences

Table 2.3 summarizes traffic analysis performance results for the mainline in the year 2015 and 2035 for the No-Build Alternative and Build Alternative. Under the No-Build Alternative, most mainline traffic within the project area would operate at a level of service E or F for the northbound and the southbound freeway. The Build Alternative for 2015 and 2035 would operate at level of service ranging from A to F for both morning and afternoon

peak hours at various locations within the project limits. Improving the levels of service on the mainline would relieve congestion at these ramps within the traffic project area. In addition, the project would be to increase the number of vehicles that can move through this segment safely and efficiently at any given time.

There would be no designated bike paths or routes affected by the project; however, the ramp intersections would provide curb ramps and crosswalks controlled by signal lights for pedestrians to use and would be designed to accommodate bicycle traffic on both sides as well. There would be no ramp closure since all work is within the median.

Table 2.3 No-Build Alternative and Build Alternative for State Route 99 Level of Service Summary

Freeway Segment	2015 No-Build		2015 Build		2035 No-Build		2035 Build	
	Morning Peak	Afternoon Peak	Morning Peak	Afternoon Peak	Morning Peak	Afternoon Peak	Morning Peak	Afternoon Peak
NORTHBOUND								
Mainline from State Route 119 to Hoskings Avenue	B	C	A	B	C	E	B	C
Mainline from Hoskings Avenue to Panama Lane	C	C	B	C	E	F	D	D
Mainline from Panama Lane to White Lane	D	D	C	C	F	F	E	D
Mainline from White Lane to Wilson Road	F	E	D	D	F	F	F	F
SOUTHBOUND								
Mainline Wilson Road to White Lane	F	F	D	F	F	F	F	F
Mainline from White Lane to Panama Lane	E	F	C	E	E	F	D	E
Mainline from Panama Lane to Hoskings Avenue	D	E	C	D	D	E	D	D
Mainline from Hoskings Avenue to Taft Highway	D	D	C	C	D	D	D	C

Source: Department of Transportation Traffic Study, 2011

By adding lanes in the median, the proposed project would allow more efficient traffic flow along this section of State Route 99. The intent of this project is to improve traffic operations and reduce congestion on the mainline of State Route 99 as well as relieve congestion at the existing interchanges at State Route 119, Panama Lane and White Lane.

The proposed widening would improve traffic operations on the State Route 99 mainline and provide level of service D or better between 2015—the construction year—and 2035.

The proposed project would temporarily cause traffic delays on the connector ramps and mainline within the project limits during construction. Mainline lanes would be shifted to temporary lanes built in the median to provide room for construction of the Pacheco Road

undercrossing (Bridge 50-0241 R/L) and the South Bakersfield Overhead (Bridge 50-0242 R/L) over the Burlington Northern Santa Fe Railway. Traffic would be reduced to a minimum of one lane in each direction during night work and two lanes in each direction during day work. Temporary barriers would be placed at the edge of the existing inside lane so the construction crews working inside the shoulder are safe while minimally affecting traffic flow.

Avoidance, Minimization, and/or Mitigation Measures

The proposed widening of the mainline would ease congestion while maintaining the existing traffic connections and movements between State Routes 99, 119, and 58. The Traffic Management Plan would be designed to minimize delays and maximize safety for motorists and construction crews prior to construction. The Traffic Management Plan would include, but is not limited to the following:

- Information brochures and mailers, press releases, and advertisements released by the Public Information Office and coordinated by the City of Bakersfield and Caltrans
- Fixed and portable changeable message signs
- Construction Zone Enhancement Enforcement Program managed by the Transportation Management Center
- Night work and project phasing

2.1.2 Visual/Aesthetics

Regulatory Setting

The National Environmental Policy Act of 1969, as amended, establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 USC 4331[b][2]). To further emphasize this point, the Federal Highway Administration in its implementation of the National Environmental Policy Act (23 USC 109[h]) directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

Likewise, the California Environmental Quality Act establishes that state policy is to take all action necessary to provide the people of the state "with…enjoyment of *aesthetic*, natural, scenic and historic environmental qualities" (California Public Resources Code Section 21001[b]).

Affected Environment

Caltrans completed a Visual Impact Assessment for the proposed project on November 12, 2010. The focus of the visual assessment is to determine the proposed project's impact on the

existing visual quality. The existing landscape of the project is viewed from both sides of the highway and is evaluated for its aesthetic benefit to the existing character of the landscape and region. The existing visual quality inventory is then compared with the proposed project features, and any potential impacts to the existing visual resources are defined.

The existing setting within the project limits is a mixture of commercial, industrial, farm land and residential landscape that dominate the views on both sides of the highway. The vegetation within the project limits consists of landscaping associated with homes and businesses.

Numerical ratings are selected based on evaluative criteria using three primary components identified as vividness, intactness, and unity. These three criteria are defined by the Federal Highway Administration and described as follows:

- Vividness–The visual power or memorability of the landscape components as they combine in striking and distinctive visual pattern.
- Intactness–The visual integrity of the landscape and its freedom from non-typical encroaching elements. If all the various elements of a landscape seem to belong together, there would be a high level of intactness.
- Unity–The visual harmony of the landscape considered as a whole. Unity represents the degree to which the visual elements maintain a coherent visual pattern.

Visual impacts consist of the removal of oleander shrubs in the median. Therefore, the viewers would experience a reduction in vividness, intactness and unity due primarily to the widened roadway and loss of vegetation.

Environmental Consequences

Visual impacts consist of the removal of some mature trees along the roadside and oleander shrubs in the median. The intactness and unity would decrease due primarily to the widened roadway and loss of vegetation. The greatest visual change would be the increased roadway width and the removed vegetation.

For highway users, people traveling through the project limits at relatively high speeds (60 to 75 miles per hour) with destinations outside the project boundary, the improved road could be in line with what they might expect as they travel on State Route 99. The physical components of the proposed project would relate to the existing character of Route 99 north and south of the project limits, where similar features can be found. The removal of mature vegetation for the construction of this project would decrease the natural character of the existing quality of view; however, with the use of aesthetic treatments and highway planting, the overall character of the landscape would not change much from the existing landscape.

In addition, all areas of soil disturbed during the construction of this project would be reinforced with erosion control treatment.

Avoidance, Minimization, and/or Mitigation Measures

To increase the potential of successful slope revegetation and stabilization, the angle of the slopes would be 1 to 4 or flatter and would be graded so the slopes have rounded tops and bottoms. Any mature vegetation currently existing within the right-of-way should be preserved or replaced where possible. Replacement planting would be included to soften the impact of the widened roadway. Tree and shrub species would be consistent with those located on or near State Route 99. To reduce glare from the additional reflective surfaces, accent colors would be added to bridge structures to match the accepted bridge accent color of Kern County.

The proposed aesthetic treatments would be coordinated through the Caltrans District Landscape Architecture unit and City of Bakersfield and the Bridge Aesthetics unit in Caltrans Headquarters. In addition, bridge accent colors such as teal green would be added to bridge structures to match the accepted bridge accent color of Kern County. The implementation of these recommendations would minimize the visual impacts and lessen the considerable changes in the overall visual quality within the project limits.

2.2 Physical Environment

2.2.1 Hazardous Waste or Materials

Regulatory Setting

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use. The primary federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 and the Comprehensive Environmental Response, Compensation and Liability Act of 1980. The purpose of the Comprehensive Environmental Response, Compensation and Liability Act, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. The Resource Conservation and Recovery Act provides for "cradle to grave" regulation of hazardous wastes. Other federal laws include:

- Community Environmental Response Facilitation Act of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)

- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

Affected Environment

Caltrans performed a hazardous waste evaluation on March 18, 2011. This included examination of consultant reports from previous initial site assessments; an Asbestos and Lead-Containing Paint Survey Report; an Aerially-Deposited Lead Study; review of the Regional Water Quality Control Board's Leaking Underground Storage Tank Information System list; a review of a corridor study compiled through the Environmental Protection Agency online data base system; and thorough field visits conducted at various times.

Environmental Consequences

The Aerially-Deposited Lead Study found that soil excavated from the surface to 2 feet below the ground surface at abutment slopes beneath the Pacheco Road Undercrossing and South Bakersfield Overhead would not, based on lead content, require special soil-handling and disposal procedures. Therefore, the soil can be reused or disposed of as non-hazardous soil since the calculated total lead concentrations were less than 50 milligrams of lead per kilogram (ten times the soluble total lead concentrations value for lead of 5.0 milligrams per liter).

For the soils excavated in the median, lead concentrations ranged from 5.0 to 150 milligrams of lead per kilogram, with an average of 15.7 milligrams of lead per kilogram. Soil materials excavated to 2 feet below the surface along the median of State Route 99 between Wilson Road and State Route 119 would not require special soil handling or disposal procedures based on lead content and can be reused or disposed of as non-hazardous soil.

An Asbestos-Containing Materials Study done on the project bridges found no asbestos-containing materials in the bridge structures.

Total lead-based paint concentrations from intact yellow traffic striping used on South Bakersfield Overhead (Bridge 50-0242L) showed a total lead concentration of less than 2 milligrams of lead per kilogram. The intact white traffic stripping used on the same bridge contained a total lead concentration of 2.2 milligrams of lead per kilogram.

Beige graffiti abatement paint and the yellow and white traffic striping sampled during the survey would not be classified as a California hazardous waste if stripped, blasted or otherwise separated from the substrate.

Avoidance, Minimization, and/or Mitigation Measures

In accordance with San Joaquin Valley Air Pollution Control District Regulation IV, Rule 4002, written notification to the air pollution district is required ten working days prior to commencement of any demolition activity (whether asbestos is present or not).

Per Caltrans' requirements, the contractor(s) would prepare a project-specific Lead Compliance Plan (California Code of Regulations Title 8, Section 1532.1, the "Lead in Construction" standard) to minimize worker exposure to lead-impacted soil. The plan would include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other health and safety protocols and procedures for the handling of lead-impacted soil.

All paints within the project limits (graffiti, graffiti abatement, and signage) would be treated as containing lead for purposes of determining the applicability of the California Division of Occupational Safety and Health Administration lead standard during any future maintenance, renovation, and demolition activities. This recommendation is based on lead-containing paint sample results and the fact that lead was a common ingredient of paints manufactured before 1978 and is still an ingredient of some paints. In accordance with Title 8, CCR, Section 1532.1(p), written notification to the nearest California Division of Occupational Safety and Health Administration district office is required at least 24 hours prior to certain lead-related work.

2.2.2 Air Quality

Regulatory Setting

The Clean Air Act, as amended in 1990, is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards. Standards have been established for six

criteria pollutants that have been linked to potential health concerns; the criteria pollutants are: carbon monoxide, nitrogen dioxide, ozone, particulate matter, lead, and sulfur dioxide (see Table 2.5).

Under the 1990 Clean Air Act Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve Federal actions to support programs or projects that are not first found to conform to State Implementation Plan for achieving the goals of the Clean Air Act requirements. Conformity with the Clean Air Act takes place on two levels—first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved.

Regional level conformity in California is concerned with how well the region is meeting the standards set for carbon monoxide, nitrogen dioxide, ozone, and particulate matter. California is in attainment for the other criteria pollutants. At the regional level, regional transportation plans are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20. Based on the projects included in the regional transportation plans, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful, the regional planning organization, such as Kern Council of Governments for Kern County and the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the Regional Transportation Plan is in conformity with the State Implementation Plan for achieving the goals of the Clean Air Act. Otherwise, the projects in the Regional Transportation Plan must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the Regional Transportation Plan, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Table 2.5 Air Quality Standards and Status

Pollutant	Averaging Time	State Standard	State Attainment Status	Federal Standard	Federal Attainment Status	Health and Atmospheric Effects	Typical Sources
Ozone (O_3)[a]	1 hour 8 hours	0.09 ppm 0.070 ppm	Non-Attainment	–[b] 0.075 ppm	Non-Attainment	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include a number of known toxic air contaminants.	Low-altitude ozone is almost entirely formed from reactive organic gases (ROG) and nitrogen oxides (NO_x) in the presence of sunlight and heat. Major sources include motor vehicles and other mobile sources, solvent evaporation, and industrial and other combustion processes. Biologically produced ROG may also contribute.
Carbon Monoxide (CO)	1 hour 8 hours 8 hours (Lake Tahoe)	20 ppm 9.0 ppm[c] 6 ppm	Attainment	35 ppm 9 ppm –	Attainment-Maintenance	Asphyxiant. CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
Respirable Particulate Matter (PM_{10})[a]	24 hours Annual	50 µg/m^3 20 µg/m^3	Non-Attainment	150 µg/m^3 –	Attainment-Maintenance	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources (wind-blown dust, ocean spray).
Fine Particulate Matter ($PM_{2.5}$)[a]	24 hours Annual	– 12 µg/m^3	Non-Attainment	35 µg/m^3 15 µg/m^3	Non-Attainment	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – considered a toxic air	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical (including photochemical) reactions involving other pollutants including NO_x, sulfur oxides (SO_x), ammonia,

Pollutant	Averaging Time	State Standard	State Attainment Status	Federal Standard	Federal Attainment Status	Health and Atmospheric Effects	Typical Sources
						contaminant – is in the $PM_{2.5}$ size range. Many aerosol and solid compounds are part of $PM_{2.5}$.	and ROG.
Nitrogen Dioxide (NO_2)	1 hour Annual	0.18 ppm 0.030 ppm	Attainment	– 0.053 ppm	Attainment	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain.	Motor vehicles and other mobile sources; refineries; industrial operations.
Sulfur Dioxide (SO_2)	1 hour 3 hours 24 hours Annual	0.25 ppm – 0.04 ppm –	Attainment	– 0.5 ppm 0.14 ppm 0.030 ppm	Attainment	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing.
Lead (Pb)[d]	Monthly Quarterly	1.5 µg/m^3 –		– 1.5 µg/m^3		Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also considered a toxic air contaminant.	Primary: lead-based industrial process like batter production and smelters. Past: lead paint, leaded gasoline. Moderate to high levels of aerially deposited lead from gasoline may still be present in soils along major roads, and can be a problem if large amounts of soil are disturbed.

Sources: California Air Resources Board Ambient Air Quality Standards chart, 02/16/2010 (http://www.arb.ca.gov/aqs/aaqs2.pdf). Sonoma-Marin Area Rail Transit Draft Air Pollutant Standards and Effects table, November 2005, page 3-52. U.S. Environmental Protection Agency and California Air Resources Board air toxics websites, 05/17/2006.

Notes: ppm = parts per million; µg/m^3 = micrograms per cubic meter

[a] Annual PM10 National Ambient Air Quality Standard revoked October 2006; was 50 µg/m^3. 24-hr. PM2.5 National Ambient Air Quality Standard tightened October 2006; was 65 µg/m^3.

[b] 12/22/2006 Federal court decision may affect applicability of Federal 1-hour ozone standard. Prior to 6/2005, the 1-hour standard was 0.12 ppm. Case is still in litigation.

[c] Rounding to an integer value is not allowed for the State 8-hour CO standard. A violation occurs at or above 9.05 ppm.

[d] The Air Resources Board has identified lead, vinyl chloride, and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM10 and, in larger proportion, PM2.5. Both the Air Resources Board and U.S. Environmental Protection Agency have identified various organic compounds that are precursors to ozone and PM2.5 as toxic air contaminants. There is no threshold level of exposure for adverse health effect determined for toxic air contaminants, and control measures may apply at ambient concentrations below any criteria levels specified for these pollutants or the general categories of pollutants to which they belong

Conformity at the project-level also requires "hot spot" analysis if an area is "nonattainment" or "maintenance" for carbon monoxide and/or particulate matter. A region is a "nonattainment" area if one or more monitoring stations in the region fail to attain the relevant standard. Areas that were previously designated as nonattainment areas but have recently met the standard are called "maintenance" areas. "Hot spot" analysis is essentially the same, for technical purposes, as carbon monoxide or particulate matter analysis performed for National Environmental Policy Act purposes. Conformity does include some specific standards for projects that require a hot spot analysis. In general, projects must not cause the carbon monoxide standard to be violated, and in "nonattainment" areas the project must not cause any increase in the number and severity of violations. If a known carbon monoxide or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

Affected Environment

An Air Quality Technical Study was prepared for the proposed project in February 2011. Bakersfield is located in Kern County, the southernmost of the Central Valley counties. Kern County straddles the Sierra Nevada Mountains and occupies a portion of the Mojave Desert.

On the Valley floor, the topography is generally flat to rolling, and the climate is characterized by long, very warm summers, and short, cool winters. Precipitation is related to latitude and elevation, with the northern portions of the valley receiving approximately 12 to 14 inches of rain a year, while the southern portion has an annual average of less than six inches. The valley has an average of less than 6 inches of rain annually with a season between November and April. Typical temperature ranges between the hottest at 118°F (48°C) to the coolest at 12°F (−11°C). Snow is rare on the Valley floor.

The proposed project is in central Bakersfield within the San Joaquin Valley Air Basin. The basin is bounded by the Tehachapi Mountains in the south, the San Joaquin-Sacramento River Delta in the north, the Sierra Nevada Mountains on the east, and the Temblor Range on the west, with peaks averaging about 3500 feet (1,100 meters) above sea level. Local air quality is affected by the climate, the type of pollutants emitted, and topography. Bakersfield is bordered by mountain ranges on three sides, with only the north an exception. Due to the surrounding mountain ranges, air circulation in the basin is restricted, resulting in the buildup of emissions and pollutants. Therefore, higher concentrations of pollutants are found in the central and southern portions of the San Joaquin Valley.

Kern County is in a non-attainment area for state standards and an attainment-maintenance area for federal PM_{10} and $PM_{2.5}$ standards.

Environmental Consequences

Regional Air Quality Conformity

The proposed project is fully funded and is in the 2011 Kern County Council of Governments Regional Transportation Plan in Table 4.1, Constrained Program of Projects with Project ID: KER08RTP077 that was found to conform by the Kern Council of Governments on July 19, 2010. The Federal Highway Administration and FTA adopted the air quality conformity finding on December 14, 2010. The project is also included in the Kern Council of Governments financially constrained 2011 Federal Transportation Improvement Program, July 15, 2010 (page 35 of 152) State Transportation Improvement Program and Regional Choice list. The design concept and scope of the proposed project is consistent with the project description in the 2011 Regional Transportation Plan, the 2011 Federal Transportation Improvement Program, and the assumptions in the associated 2011 Regional Emissions Analysis.

Project Level Conformity

The project is in a state carbon monoxide attainment area, but in a federal attainment-maintenance area. Due to the attainment status, a quantitative federal Project Level Conformity Analysis is not required.

Particulate Matter Analysis

Particles less than 10 to 2 micrometers ($PM_{2.5}$) are thought to be the greatest health risk because their smaller size means they can be inhaled and accumulate in the respiratory system. Qualitative particulate matter hot-spot analysis is required under the Environmental Protection Agency Transportation Conformity rule for projects of air quality concern, as described in EPA's Final Rule of March 10, 2006. Project types listed in 40 Code of Federal Regulations 93.126 do not require any hot-spot analysis for conformity purposes. All other projects in areas subject to conformity for particulate matter (PM_{10} or $PM_{2.5}$) must have documented consideration with interagency consultation and public involvement of whether or not they are Projects of Air Quality Concern; if they are Projects of Air Quality Concern, a full qualitative analysis is needed.

This project is in a non-attainment area for state standards and the federal $PM_{2.5}$ standards and in an attainment-maintenance area for federal PM_{10}. This project has been determined to be a Project of Air Quality Concern. On April 20, 2011, an air conformity study was completed and submitted to the Model Coordination Committee for Interagency Consultation. Status is pending.

Ozone Analysis and Conclusion

Ozone is considered a regional pollutant. Ozone is not usually emitted directly into the air, but at ground-level is created by a chemical reaction between oxides of nitrogen and volatile organic compounds in the presence of sunlight. The local transportation planning organizations identify all reasonably available transportation control measures in their transportation plans and programs in accordance with the 1990 Federal Clean Air Act. The project is located within ozone 1 hour and 8 hour state and federal non-attainment areas. The project was modeled in the regional air modeling in regional plans and programs discussed in the above paragraph. There are no emissions estimating methodology or Environmental Protection Agency or Air Resources Board project-level emissions standards for ozone. It is a regional pollutant caused by the reaction of sunlight and other pollutants and therefore would not be a project-level ozone study.

Carbon Monoxide Hot-Spot Analysis

The proposed project is located in Kern County, which is in attainment for state carbon monoxide standards, but is an attainment-maintenance area for federal standards. The University of California (Davis) Transportation Project-Level Carbon Monoxide Protocol, dated December 1997, was used to evaluate the potential carbon monoxide impact of this project (see Table 2.6). Due to the attainment status, a quantitative federal Project Level Conformity Analysis is not required. The December 1997 University of California (Davis) Transportation Project-Level Carbon Monoxide Protocol was followed as the preferred guideline in California to qualitatively evaluate potential effects, if any.

Table 2.6 Project-Level Carbon Monoxide Protocol

Protocol Question	Answer
Does the project significantly increase the percentage of vehicles operating in cold start mode?	No
Does the project improve traffic flow?	Yes, levels of service would improve
Does Project worsen air quality	No
Is the project suspected of resulting in higher CO concentrations than those existing within the region at the time attainment demonstration?	No

The highest carbon monoxide emissions occur at very low speeds, during stop and go traffic and when vehicles undergo a cold start (the vehicle has been sitting for at least 8 hours). The project is not expected to result in higher carbon monoxide concentrations for the following reasons: this project is not expected to increase

vehicle cold starts and is expected to decrease stop and go traffic; there is expected to be less carbon monoxide emission from future model-year gasoline and diesel vehicles; and the proposed alternatives would provide a better level of service on nearby streets and ramps.

Naturally Occurring Asbestos

According to the California Division of Mines and Geology, Kern County is not among areas listed as containing naturally occurring asbestos (Governor's Office of Planning and Research, October 26, 2000). Naturally occurring asbestos can be found in the type of rock that has very low silica content such as ultramafic and serpentine. Impacts from naturally occurring asbestos during project construction would be minimal to none.

Mobile-Source Air Toxics

These toxics are a subset of the 188 air toxics defined in the Clean Air Act. They are now federally regulated under 40 Code of Federal Regulations 1502.22 by the U.S. Environmental Protection Agency. Mobile-source air toxics are 21 compounds emitted from highway vehicles and non-road equipment. The six main toxics are diesel particulate matter, benzene, 1-3 butadiene, acetaldehyde, naphthalene and formaldehyde. The Federal Highway Administration issued interim guidance on September 30, 2009 for analysis in National Environmental Policy Act documents. There are no existing ambient air standards for the six main toxics. Most mobile-source air toxics derive from human-made sources, including on-road mobile sources (vehicles used on roads for transportation of passengers or freight), non-road mobile sources (construction and agriculture equipments and recreation), area sources (such as drycleaners, gas stations) and stationary sources (power plants, chemical plants, oil refineries).

Mobile-source air toxics are compounds emitted to the air when the fuel evaporates or passes through the engine unburned. The Environmental Protection Agency has yet to establish air quality standards or guidelines for assessing the construction project level effects of mobile air toxics. However, the Environmental Protection Agency continues to assess the risks of various kinds of exposures to mobile source air toxics through the Integrated Risk Information System, it is a human health assessment program that evaluates quantitative and qualitative human health risk information on effects that may result from exposure to various substances found in the environment contaminants. The following toxicity information for the six prioritized mobile-source air toxics (from the 2001 Environmental Protection Agency regulation) was taken

from the Integrated Risk Information System database Weight of Evidence Characterization summaries. This information represents the Environmental Protection Agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- **Benzene** is characterized as a known human carcinogen. The potential carcinogenicity of **acrolein** cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.
- **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- **Diesel exhaust** is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases.
- **Diesel exhaust** also represents chronic respiratory effects, possibly the primary noncancerous hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

Currently, there are no technical tools that can predict the project-specific health impacts of the emission changes associated with the alternatives in this Environmental Assessment. Short-term construction effects would include construction activities which could increase short-term air emissions containing hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors. The bulk of pollutants would be windblown dust generated during excavation, hauling, and various other grading activities. The impacts of these activities would vary each day as construction progresses and weather conditions change. Dust and some odors could probably cause infrequent bother to some residences within the project area.

The Federal Highway Administration has issued interim guidance on how mobile-source air toxics should be addressed in National Environmental Policy Act documents for highway projects. The Federal Highway Administration has developed a tiered approach for analyzing mobile-source air toxics in National Environmental

Policy Act documents. Depending on the specific project circumstances, the Federal Highway Administration has identified three levels of analysis.

Level 1 projects are exempt with no potential for meaningful mobile-source air toxics effects. These projects require no analysis. The types of projects included in this category are projects qualifying as a categorical exclusion under 23 Code of Federal Regulations 771.117(c), projects exempt under the Clean Air Act conformity rule under 40 CFR 93.126, other projects with no meaningful impacts on traffic volumes or vehicle mix.

Level 2 projects have low potential for mobile-source air toxics effects and require only a qualitative analysis such as improve operations of highway, transit or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase mobile-source air toxics emissions.

Level 3 projects are those that have higher potential for mobile-source air toxics. These require quantitative analysis to differentiate alternatives. To fall into this category, a project must create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location; or create new or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the average-annual daily traffic is projected to be in the range of 140,000 to 150,000 or greater by the design year. Furthermore, the proposed project must be located in proximity to populated areas.

The proposed project best fits into Level 2, low potential for mobile-source air toxics effects, because the design year traffic is predicted to be in the range of 140,000 average-annual daily traffic.

Emissions would likely be proportionately lower by annual vehicle miles traveled than present levels in the design year (2035) because of the Environmental Protection Agency's national control programs that are projected to reduce annual mobile-source air toxics emissions by 72 percent from 1999 to 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, annual vehicle-miles-traveled growth rates, and local control measures. However, the magnitude of the Environmental Protection Agency -projected reductions is so great (even after accounting for annual vehicle-miles-traveled growth) that mobile-source air toxics emissions in the study area are likely to be lower in the future in virtually all locations (see Table 2.7).

Table 2.7 Projected Mobile Source Air Toxics—Tons per Year

Year	Annual Vehicle Miles Traveled (VMT)	Diesel PM (Tons/Yr)	Formal-dehyde	Butadiene	Benzene	Acrolein	Acetaldelyde
2006	277,950	0.027	0.009	0.001	0.003	0.000	0.004
2015 Alt A or B	473,249	0.020	0.006	0.000	0.002	0.000	0.003
2015 No-Build	473,249	0.022	0.008	0.000	0.003	0.000	0.004
2015 Alt A or B	605,607	0.008	0.003	0.000	0.001	0.000	0.001
2035 No-Build	559,646	0.007	0.003	0.000	0.001	0.000	0.001

Source: Caltrans District 6 Environmental Engineering CT-EMFAC runs-January 2011. VMT =Annual average daily traffic x project length in miles, or 54,500 x 5.1 = 277,950.

Please note that before September 2009, Federal Highway Administration guidance included acetaldehyde as one of the subset of six mobile-source air toxics compounds that were identified as having the greatest influence on health. Naphthalene replaced acetaldehyde based on newer health studies considered by the Federal Highway Administration. However, naphthalene is still considered as an important pollutant according to the Environmental Protection Agency. Data in Table 2.7 was obtained by using CT-EMFAC 2007. This model does not currently have the capability of modeling naphthalene. No sensitive receptors were identified in the project area.

Mobile-Source Air Toxics Conclusions

The proposed project is a project with low potential mobile source air toxics effects. The Environmental Protection Agency projections indicate a continuing downward trend of the six primary mobile source air toxics. The study of mobile source air toxics, dose-response effects, and modeling tools are currently in a state where accurate information is incomplete or unavailable. This is relevant to making an accurate prediction of any reasonably foreseeable adverse effects on the human environment. There is currently no specific significance level for Receptor exposure. Without a significance level for exposure, one cannot accurately and scientifically predict the effects on the human environment. Studies are currently being conducted to clarify some of these unknowns; however, the information is not available now.

Avoidance, Minimization, and/or Mitigation Measures

Project design includes paved shoulders which should minimize particulate matter and re-entrained dust. A rough estimate of the project acreage and scope indicates that this project would be subject to the San Joaquin Valley Air Pollution Control District rule 9510 (Indirect Source Review), requiring mitigating oxides of nitrogen and PM_{10} construction emissions. Caltrans is now requiring contractors to be responsible for submitting the Rule 9510 Air Impact Analysis and related fees, as well as the dust control plan to the Air District prior to beginning construction. When an Air Impact Analysis is required, the applicant has the choice to pay fees based on the amount of estimate emissions or to use a "cleaner than average" construction fleet. A cleaner than average fleet is a possible method to minimize and mitigate construction vehicle emissions.

- Caltrans Standard Specifications pertaining to dust control and dust palliative requirement is a required part of all construction contracts and should effectively reduce and control emission impacts during construction. The provisions of Caltrans Standard Specifications, Section 7-1.0F "Air Pollution Control" and Section 10 "Dust Control" require the contractor to comply with the San Joaquin Valley Air Pollution Control District rules, ordinances, and regulations.
- The proposed project would comply with San Joaquin Valley Air Pollution Control District Rule 9510 by achieving a 20 percent nitrogen oxide reduction in exhaust emissions compared to the statewide fleet average. This can be met by implementing one or more of the following measures:
- Operating equipment powered by engines that were manufactured later than 1996.
- Retrofitting existing equipment with control devices (e.g., exhaust oxidation catalyst).
- Using cleaner fuels such as liquefied natural gas, compressed natural gas, or aqueous diesel fuel, as feasible.
- Prohibiting trucks from idling for longer than 10 minutes, whenever practical.
- Using only well-maintained equipment; properly planning to reduce rework and multiple handling of earth materials.
- Paying a mitigation fee to the San Joaquin Valley Air Pollution Control District to obtain reductions through incentive and other programs.

Short-Term Construction Impacts

During construction, the proposed project would generate air pollutants. The exhaust from construction equipment contains hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors. However, the largest percentage of pollutants would be windblown dust generated during excavation, grading, hauling, and various other activities. The impacts of these activities would vary each day as construction progresses.

Most of the construction impacts to air quality are short-term in duration and so would not result in adverse or long-term conditions. The construction contractor would comply with Caltrans' Standard Specifications. Furthermore, use of the following measures by the contractor would reduce any air quality impacts resulting from construction activities:

- Apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions.
- Spread soil binder on any unpaved roads used for construction purposes and on all parking areas for project construction.
- Wash trucks off as they leave the right of way as necessary to control fugitive dust emissions.
- Tune and maintain construction equipment and vehicles.
- Use low sulfur fuel in all construction equipment as provided for in California Code of Regulations Title 17, Section 93114.
- Develop a special dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.
- Locate equipment and materials storage sites as far away from residential and park uses as practical and keep construction areas clean and orderly.
- Establish environmentally sensitive areas, to the extent feasible, surrounding sensitive air receptors within which construction activities involving extended idling of diesel equipment would be prohibited.
- Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic.
- Cover all transported loads of soils and wet materials prior to transport, or provide adequate freeboard (space from the top of the material to the top of the truck) to reduce PM_{10} and deposition of particulate matter during transportation.
- Remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter.

- Route and schedule construction traffic, to the extent feasible, to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

2.2.3 Noise and Vibration

Regulatory Setting

The National Environmental Policy Act of 1969 and the California Environmental Quality Act provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between the National Environmental Policy Act and California Environmental Quality Act.

California Environmental Quality Act

The California Environmental Quality Act requires a strictly baseline versus build analysis to assess whether a proposed project would have a noise impact. If a proposed project is determined to have a significant noise impact under the California Environmental Quality Act, then the California Environmental Quality Act dictates that mitigation measures must be incorporated into the project unless such measures are not feasible.

National Environmental Policy Act—23 Code of Federal Regulation 72

For highway transportation projects with the Federal Highway Administration (and Caltrans, as assigned) involvement, the federal-Aid Highway Act of 1970 and the associated implementing regulations (23 Code of Federal Regulation 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise abatement criteria that are used to determine when a noise impact would occur. The noise abatement criteria differ depending on the type of land use under analysis. For example, the noise abatement criterion for residences (67 dBA) is lower than the noise abatement criteria for commercial areas (72 dBA). The following table lists the noise abatement criteria for use in the National Environmental Policy Act-23 CFR 772 analysis (see Table 2.8).

Table 2.8 Activity Categories and Noise Abatement Criteria

Activity Category	Noise Abatement Criteria (Hourly A-Weighted Noise Level, dBA Leq[h])	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above
D	–	Undeveloped lands.
E	52 Interior	Residence, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Source: Caltrans Traffic Noise Analysis Manual, 1998.

Figure 2.1 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise-levels discussed in this section with common activities.

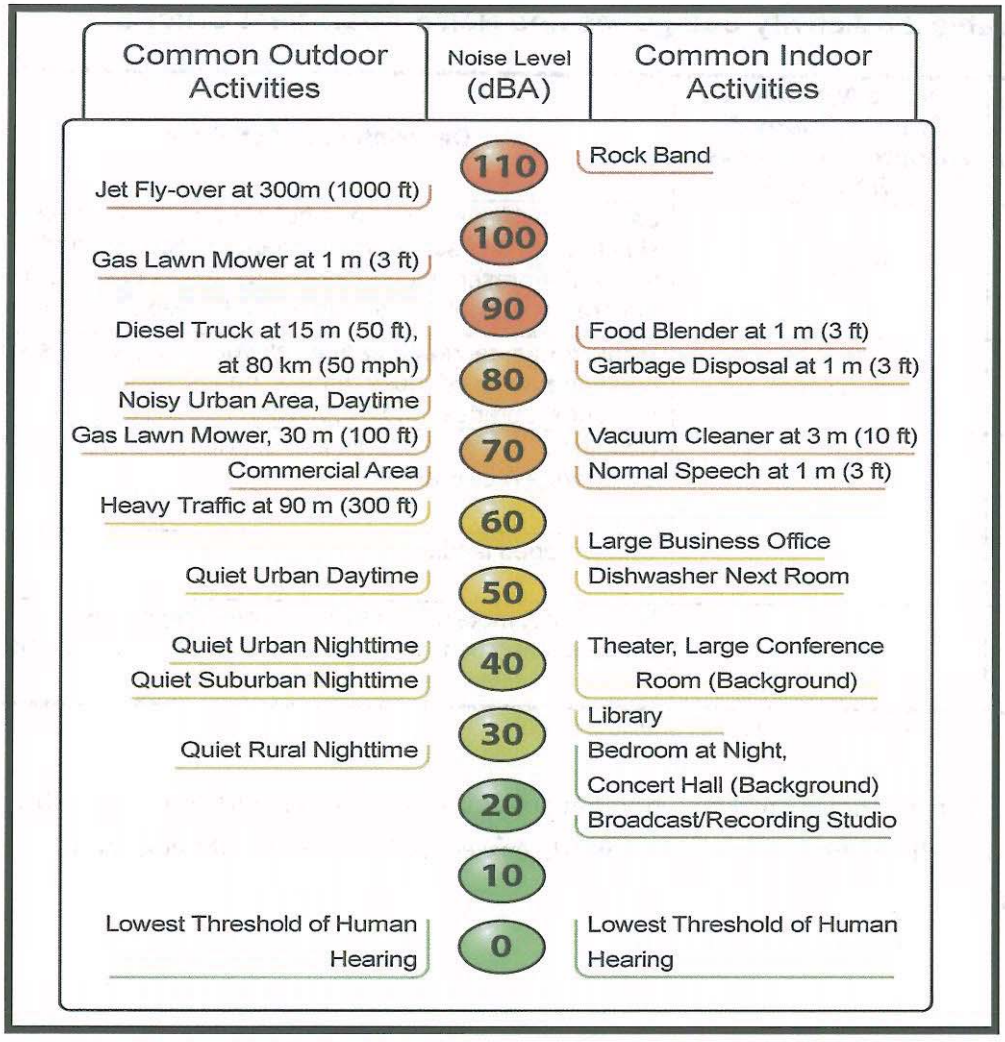


Figure 2-1 Typical Noise Levels

In accordance with the Caltrans *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, August 2006*, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as an increase of 12 dBA or greater) or when the future noise level with the project approaches or exceeds the noise abatement criteria. Approaching the noise abatement criteria is defined as coming within 1 dBA of the 12 dBA increase.

If it is determined that the project would have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

The Caltrans *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 5 dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents' acceptance, the absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies input, newly constructed development versus development pre-dating 1978 and the cost per benefited residence.

Sound level, frequencies, exposure period, and changes or fluctuations in the noise levels during exposure affect sound perceived by the human ear. Sound levels are measured as A-weighted decibels are abbreviated dBA. The A-weighted decibel unit describes a noise level at just one moment since most noises are constant. Highway traffic noise levels area always changing due to traffic volume, type and speed of vehicles that producing varies noise level. One common descriptor used to characterize the fluctuating noise level, called the equivalent sound level or Leq(h), where h represents time, is usually evaluated over a one-hour time period. Highway traffic noise impacts are evaluated by using average noise levels at sensitive Receptors during the worst or noisiest one-hour period of the day.

Affected Environment

A Noise Study Report was prepared in March 2011 to assess potential noise impacts of the proposed project. This segment of State Route 99 is a six-lane facility in a rural-urban setting. The terrain is generally flat and the highway within the project area is mainly at grade, with a few areas below grade. Current land uses within the project limits are primarily single-family residential and commercial developments.

Approaching from the south, State Route 99 mainline passes under Taft Highway (State Route 119), returns to level ground before passing beneath Panama Lane. After Panama Lane, State Route 99 mainline is at level grade before gradually rising in elevation to go over Pacheco Road and White Lane. State Route 99 then goes downhill toward the end of the project at post mile 22.1.

Heading south from Wilson Road, State Route 99 mainline is below grade before returning to ground level toward Pacheco Road at post mile 21.19. After Pacheco Road, State Route 99 mainline proceeds downhill at post mile 20.63 before a slight elevation change to level out all the way to the Taft Highway junction.

Heading north, there are sound walls at several locations from Taft Highway to Wilson Road. The first is immediately after Panama Lane at post mile 19.737. The wall is about 12 feet high and runs along State Route 99 to Pacheco Road at post mile 20.5. The second sound wall (post mile 20.795) curves along the White Lane off-ramp to post mile 20.9. The third sound wall begins after White Lane at post mile 20.975 and ends at Planz Road post mile 21.43.

There are few sound walls constructed along State Route 99 mainline to the south. The first sound wall (post mile 20.10) was built along the southbound off-ramp to Panama Road (post mile 19.9). The second sound wall is at post mile 19.50, after the Panama Road interchange, and ends before Hosking Avenue at post mile 19.10. The last sound wall is south of Hosking Avenue at post mile 18.83 and ends before the southbound State Route 99 off-ramp to Taft Highway at post mile 18.37.

The analysis followed guidelines in the Caltrans *Traffic Noise Analysis Protocol and Technical Noise Supplement*, which satisfies the requirements for noise capabilities studies and abatement requirements. The protocol is also consistent with the requirements of the Federal Highway Administration, and it is designed to evaluate potential traffic-generated noise impacts, as well as determining reasonable and feasible noise abatement measures for the project.

In addition, traffic counts were collected to calibrate the traffic noise model, which was then used to predict peak hour noise levels for the existing and the build and no-build design years (2035).

Caltrans identified 18 receptors (nearby single-family homes and apartment buildings) that could be affected by the proposed project (see Figures 2-2 through 2-6). The existing noise levels for the 18 identified receptors ranged from 56 dBA to 69 dBA. The noise abatement criterion for residences is 67 dBA.

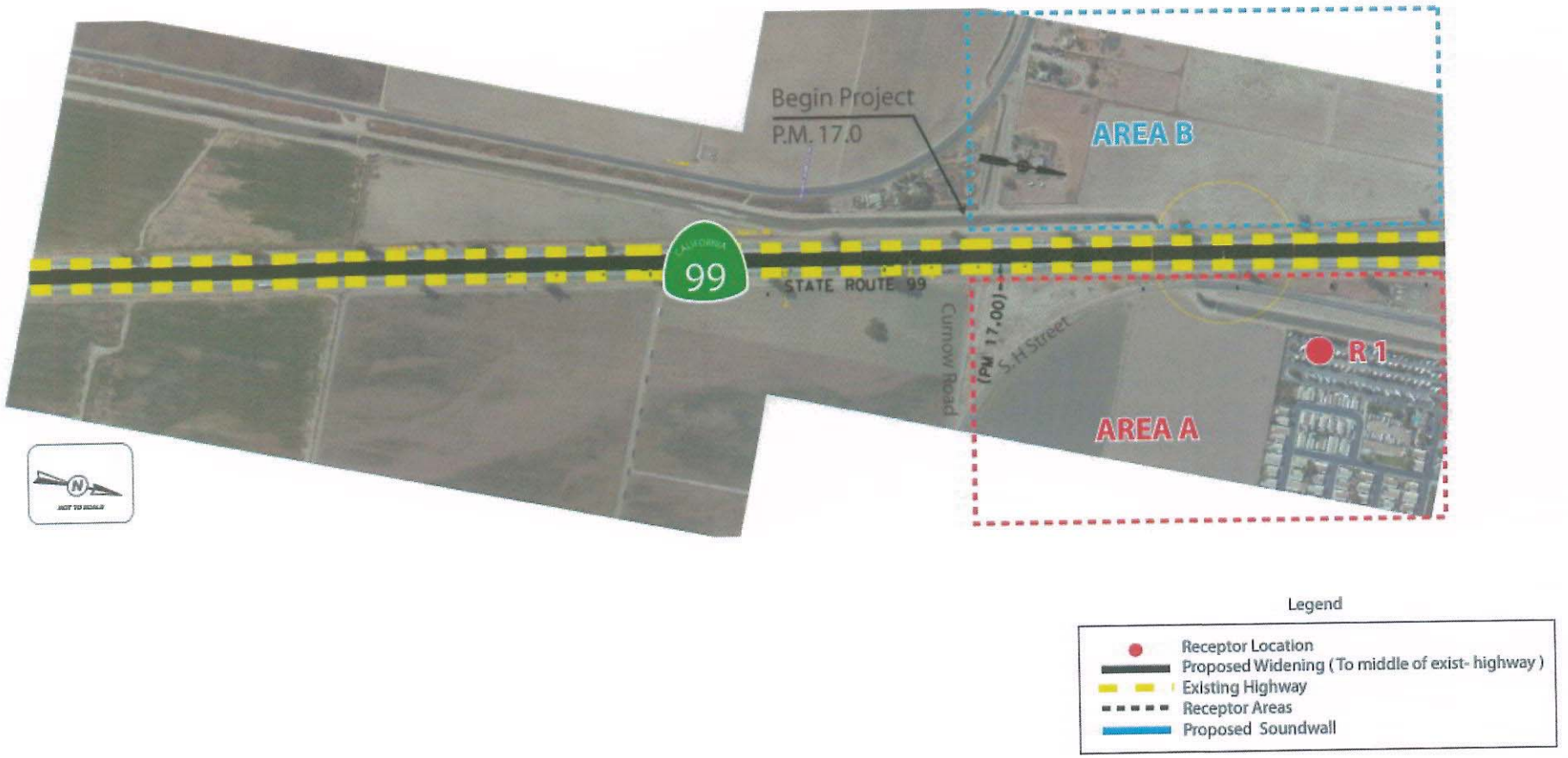


Figure 2-2 Receptor Location R1

Figure 2-3 Receptor Locations R2 and R3

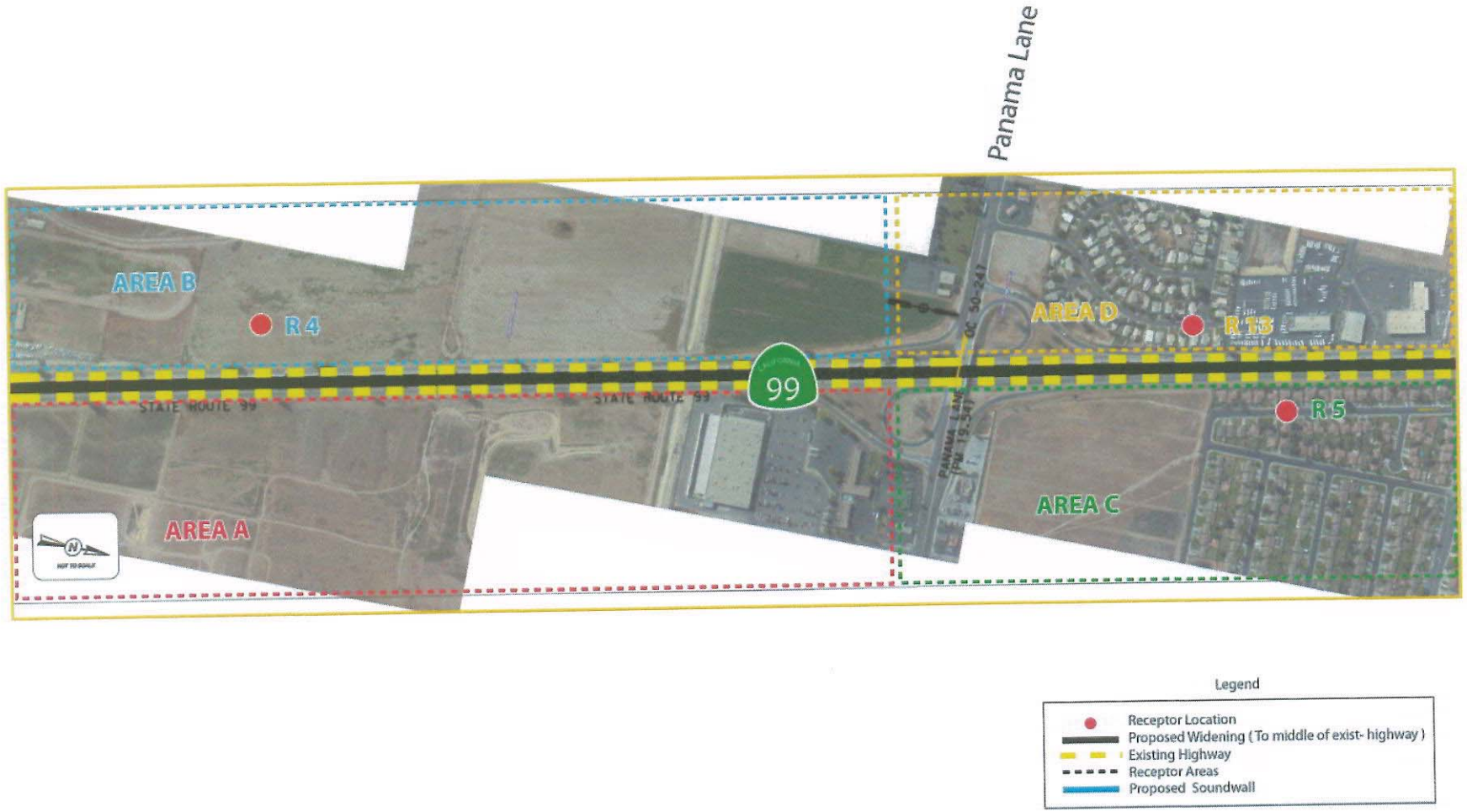


Figure 2-4 Receptor Locations R4, R5, and R13

Figure 2-5 Receptor Locations R6 to R12

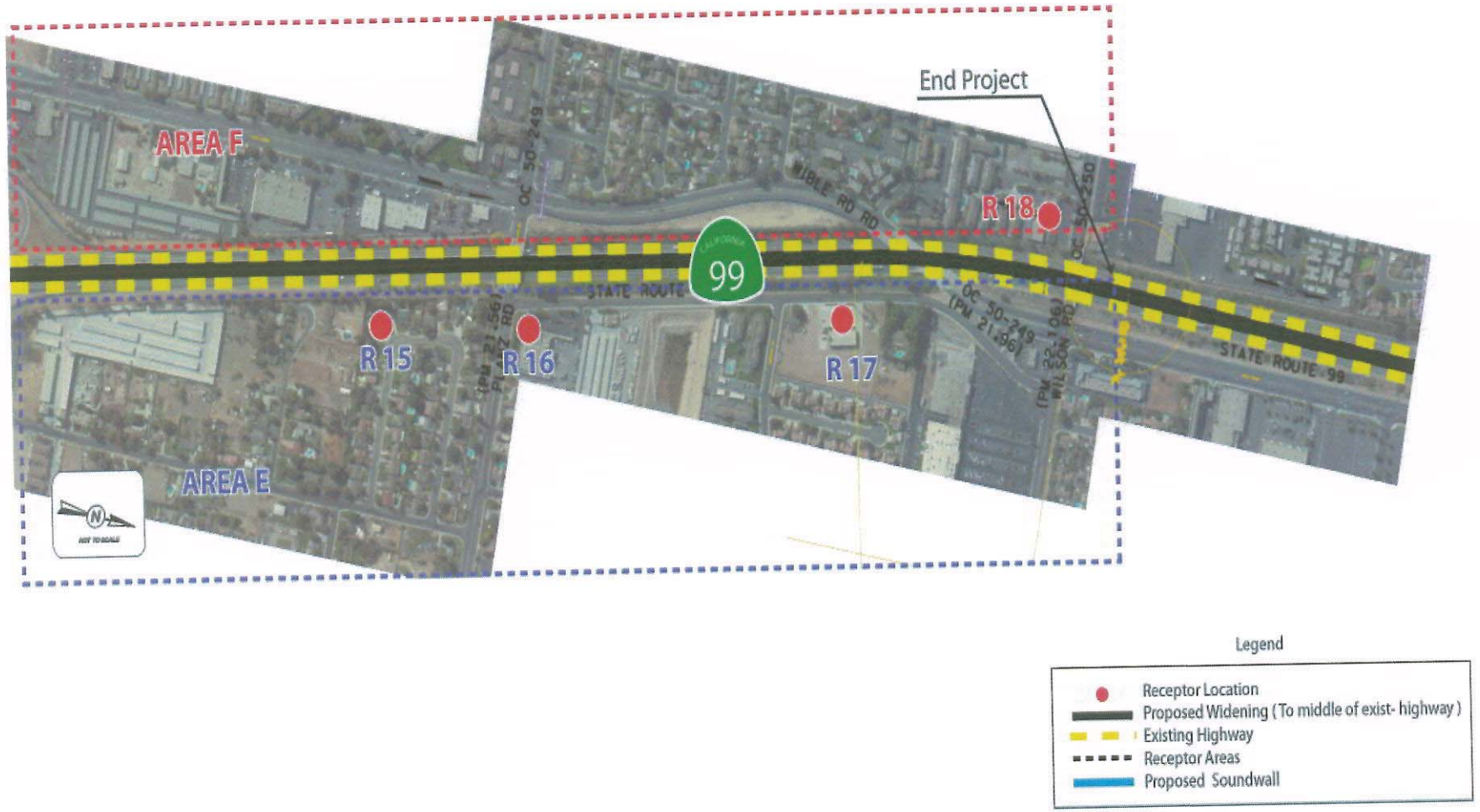


Figure 2-6 Receptor Locations R15 to R18

Environmental Consequences under the National Environmental Policy Act

The Caltrans Traffic Noise Analysis Protocol defines a noise impact as occurring when the future noise level at an affected Receptor approaches or exceeds the noise abatement criteria. The existing noise levels were measured at 18 receptors during the highest traffic noise hour. The following is a discussion of noise abatement considered for each evaluation area (A to F) where traffic noise impacts are predicted. Area C has been identified as approaching or exceeding the noise abatement criteria by the year 2035 with or without the project. Table 2.9 shows the existing and post-project peak-hour noise levels.

Area A

Area A extends from post mile 17.0 to Panama Lane on the east side of State Route 99. The area terrain is generally level with open fields and scattered buildings. There are two representative receptors (R1 and R2) studied within Area A. Receptors represent 26 residential properties east of State Route 99. The existing noise level in Area A is from 60 to 63 dBA. The traffic noise modeling results in Table 2.9 indicate that traffic noise levels at residences are predicted to be in the range of 64 to 65 dBA $L_{eq}(h)$ in the design year (an increase in noise between existing conditions and the design year of 2 to 4 dBA). Because the predicted noise levels are determined to be below the noise abatement criterion of 67 dBA, noise abatement need not to be considered in this area.

Area B

Area B extends from post mile 17.0 to Panama Lane on the west side of State Route 99. The area is even terrain with a cluster of newly-built residential housing in a subdivision. Within this area, there are two existing sound walls about 12 to 14 feet high at post mile 18.37 to post mile 18.83 and between Hosking Avenue (post mile 19.10) and Panama Lane (post mile 19.50). There are a total of two representative receptors studied within Area B. Receptors R3 to R4 represent 89 residential properties west of State Route 99 where the existing noise level is 62 dBA.

The traffic noise modeling results in Table 2.9 indicate traffic noise levels at the residences are predicted to be 64 dBA $L_{eq}(h)$ in the design year (an increase in noise between existing conditions and the design year of 2 dBA). Because the predicted noise level does not approach 67 dBA $L_{eq}(h)$, traffic noise impacts are not predicted at residences in this area, and noise abatement need not be considered.

Area C

Area C extends from Panama Lane to South Bakersfield Overhead (Bridge 50-241) on the east side of State Route 99. The highway mainline within Area C is typically at grade with an exception at Panama Lane and Pacheco Road. At the Panama Lane interchange, the State Route 99 mainline goes underneath the bridge and gradually elevates toward the Pacheco Road interchange. There is an existing sound wall from post mile 19.74 to post mile 20.5. The sound wall, roughly 12 to 14 feet high, is about 30 feet from the edge of highway shoulder.

There are a total of eight receptors (R5 to R12) in area C with an existing noise level range from 62 to 65 dBA. One receptor (R5) corresponds to forty residential units while receptors (R6 to R12) represent seven residential units. The traffic noise modeling results in Table 2.9 indicate traffic noise levels at the residences represented by R5 are predicted to be 65 dBA $L_{eq}(h)$ in the design year (an increase in noise between existing conditions and the design year of 3 dBA). Furthermore, traffic noise levels for R6 to R12 are predicted to be in the range of 66 to 69 dBA (an increase in noise between existing conditions and the design year of 2 to 4 dBA). Because the existing noise level is approaching or exceeding 67 dBA $L_{eq}(h)$, traffic noise impacts are predicted at the R6 to R12 residential area to be 66 to 69 dBA; therefore, noise abatement must be considered. Detailed modeling analysis was conducted for a sound wall at the edge of the shoulder of northbound State Route 99. The sound wall evaluated is identified as Barrier SW-1 in Figure 2-5. Table 2.9 summarizes the results of the sound wall analysis for each receptor location.

Area D

Area D extends from Panama Lane to South Bakersfield Overhead (Bridge 50-241) on the west side of State Route 99. Within area D, the highway mainline is typically at grade with the exceptions of Panama Lane and Pacheco Road. At the Panama Lane interchange, State Route 99 mainline goes underneath the bridge and gradually rises in elevation toward the Pacheco Road interchange. There is an existing short sound wall along the southbound State Route 99 off-ramp (post mile 19.9) to Panama Lane (post mile 20.11).

Receptor R13 within Area D represents two residential properties west of State Route 99.

The existing noise level in Area D is 62 dBA. The traffic noise modeling results in Table 2.9 indicate traffic noise levels at the residences represented by R13 are predicted to be 65 dBA $L_{eq}(h)$ in the design year (an increase in noise between existing conditions and the design year of 3 dBA). Because the projected noise level

does not approach 67 dBA $L_{eq}(h)$, traffic noise impacts are not predicted at residences in this area, and noise abatement need not to be considered.

Area E

Area E extends from South Bakersfield Overhead (Bridge 50-241) to Wilson Rd on the east side of State Route 99. The terrain within this Area E is mostly below grade with an exception at White Lane where the highway mainline is on an incline slope. There are two existing sound walls, one at northbound State Route 99 off-ramp to White Lane (post mile 20.79 to post mile 20.9) and another beginning right after the White Lane interchange (post mile 21.18) and extending to Planz Road (post mile 18.37).

Four receptors were studied within area E. Receptors R14 to R17 represent 24 residential properties east of the State Route 99 with an existing noise level between 58 to 61 dBA.

The traffic noise modeling results in Table 2.9 indicate traffic noise levels at the residences represented by R14-R17 are predicted to be in the range of 58 to 64 dBA $L_{eq}(h)$ in the design year (an increase in noise between existing conditions and the design year of 2-3 dBA). Because the existing noise level is below 67 dBA $L_{eq}(h)$, traffic noise impacts are not predicted at residences in this area, and noise abatement need not to be considered.

Area F

Area E extends from South Bakersfield Overhead (Bridge 50-241) to Wilson Road on the west side of State Route 99. The terrain within this Area F is mostly below grade with an exception between White Lane and Pacheco Road where the highway mainline is an incline slope.

Receptor R18 within Area F represents 16 residential properties west of the State Route 99. The existing noise level is 60 dBA. The traffic noise modeling results in Table 2.9 indicate traffic noise levels at the residences represented by R18 are predicted to be 63 dBA $L_{eq}(h)$ in the design year (an increase in noise between existing conditions and the design year of 3 dBA). Because the predicted noise level is below 67 dBA $L_{eq}(h)$, traffic noise impacts are not predicted at residences in this area, and noise abatement need not to be considered.

Table 2.9 Summary of Soundwall Analysis by Receptor Location

Receptor	Location	Existing Noise Level (dBA)	Predicted Noise Level without Project (dBA)	Predicted Noise Level with Project (dBA)	Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement (dBA) with a 14-foot- heigh wall	Reasonable and Feasible
R-1	A	60	64	64	N/A	N/A	N/A
R-2	A	63	65	65	N/A	N/A	N/A
R-3	B	62	64	64	N/A	N/A	N/A
R-4	B	62	64	64	N/A	N/A	N/A
R-5	C	62	65	65	N/A	N/A	N/A
R-6	C	64	67	67	SW1	62	Yes
R-7	C	65	68	68	SW1	63	Yes
R-8	C	65	69	69	SW1	64	Yes
R-9	C	63	66	66	SW1	61	Yes
R-10	C	63	66	66	SW1	61	Yes
R-11	C	64	67	67	SW1	62	Yes
R-12	C	64	66	66	SW1	61	Yes
R-13	D	62	65	65	N/A	N/A	N/A
R-14	E	56	59	59	N/A	N/A	N/A
R-15	E	56	58	58	N/A	N/A	N/A
R-16	E	61	64	64	N/A	N/A	N/A
R-17	E	60	63	63	N/A	N/A	N/A
R-18	F	60	63	63	N/A	N/A	N/A

Source: Department of Transportation-Noise Study, 2011

Environmental Consequences under the California Environmental Quality Act

When determining whether a noise impact is significant under the California Environmental Quality Act, the projected noise levels for the No-Build Alternative are compared to those for the Build Alternative. The California Environmental Quality Act noise analysis is completely independent of the National Environmental Quality Act (23 Code of Federal Regulations 772) analysis discussed above, which is centered on noise abatement criteria. Under the California Environmental Quality Act, the assessment entails looking at the setting of the noise impact and then how large or perceptible any noise increase would be in a given area. Key considerations

include the uniqueness of the setting, the sensitive nature of the noise receptors, the magnitude of the noise increase, the number of residences affected, and the absolute noise level. Eighteen receptors were identified within the project limits.

Caltrans *Traffic Noise Analysis Protocol* defines that a noise impact occurs when the future noise level with the project is substantially greater than the existing noise level. Noise levels at 18 receptors would see increased noise of 2 to 4 dBA in both the No-Build Alternative and Build Alternative future years (see Table 2.9). Caltrans noise policy is contained in Caltrans' August 2006 *Traffic Noise Analysis Protocol*. This protocol, approved as California's official noise policy by the Federal Highway Administration on August 16, 2006, defines a substantial increase as an increase of 12 decibels over existing noise levels. It is widely accepted that the average human ear can barely perceive noise level changes of 3 decibels in an outdoor setting. Since the project would not cause an increase of more than 4 decibels at any of the receptors and Caltrans' Protocol defines a substantial increase as an increase of 12 decibels, Caltrans has determined there are no significant impacts under the California Environmental Quality Act.

Avoidance, Minimization, and/or Noise Abatement under the National Environmental Policy Act

For purposes of the National Environmental Policy Act, noise abatement must be considered because Receptors have been identified as approaching or exceeding the noise abatement criteria by the design year of 2035. Based on the studies completed to date, Caltrans intends to incorporate noise abatement in the form of a soundwall from R6 to R 12 (see Figure 2-4).

Soundwall SW-1

There is an existing wall at this location. However, it was not adequate to trim down the noise from the proposed project. SW-1 would abate noise for seven receptors from Panama Lane to the South Bakersfield Overhead (Bridge 50-241) on the east side of State Route 99 (see Figure 2-5). Receptors 6, 7, 8, 9, 10, 11 and 12 represent seven single-family homes on Corrine Street with the existing noise level range from 63 dBA to 65 dBA. The predicted noise levels with the project range from 66 dBA to 69 dBA. To achieve a 5-decibel reduction, a soundwall 14 feet high and 550 feet long would be needed. The reasonable cost for this barrier is $315,000.

If the total cost of the wall at this location is less than the total cost allowance, then the wall would likely be incorporated into the project. The 2011 base allowance is $31,000 per-residence, calculated in accordance with the Caltrans *Traffic Noise Analysis Protocol*. The total reasonable allowance for SW-1 from the noise study

report dated March 25, 2011 is $315,000. However, the Noise Abatement Decision Report that the cost estimate for the noise abatement measures is $1,180,000 or about three times over the proposed reasonable allowance. Actions to reduce the projected cost of the sound wall are not considered feasible. Shortening the wall would not accomplish the noise-level reduction established in the noise abatement criteria. In addition, reducing the length of the wall would lower the number of residences benefitting from the barrier, thus reducing the reasonable allowance total. Based on preliminary project design and cost estimate, it is not considered feasible to build SW-1.

Construction Noise

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction noise is regulated by Caltrans Standard Specifications Section 7-1.01I, "Sound Control Requirements," which states that noise levels generated during construction would comply with applicable local, state, and federal regulations, and that all equipment would be fitted with adequate mufflers according to the manufacturers' specifications.

Table 2.10 summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90 dBA at a distance of 50 feet. Noise produced by construction equipment would be reduced over distance.

Table 2.10 Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82

Source: Federal Transit Administration, 1995.

No adverse noise impacts from construction are anticipated because construction would be done in accordance with Caltrans Standard Specifications Section 7-1.01I and applicable local noise standards. Construction noise would be short-term,

intermittent, and overshadowed by local traffic noise. Further, implementing the following measures would minimize the temporary noise impacts from construction:

- All equipment would have sound-control devices that are no less effective than those provided on the original equipment. No equipment would have an un-muffled exhaust.
- As directed by Caltrans, the contractor would use appropriate additional noise mitigation measures, including changing the location of stationary construction equipment; turning off idling equipment; rescheduling construction activity; notifying adjacent residents in advance of construction work; and installing acoustic barriers around stationary construction noise sources.

2.3 Biological Environment

A Natural Environment Study was completed for the project on February 25, 2011. The project area was surveyed November 5, 2010, November 10, 2010, and January 20, 2011 for evidence of listed species, potential habitat that each would require, and ecologically important biotic communities. The following were used for all database and species list searches: the Gosford U.S. Geological Survey 7.5-minute quadrangle; the U.S. Fish and Wildlife Service Threatened and Endangered Species List, originally obtained in August 2010 and updated in January 201; the California Natural Diversity Database maintained by the California Department of Fish and Game, updated January 2011; and the California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California.

2.3.1 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration Fisheries, and the California Department of Fish and Game are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the state or federal Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.2 below. All other special-status animal species are discussed here, including the California Department of Fish and Game fully protected species and species of special concern, and U.S. Fish and Wildlife Service or National Oceanic and Atmospheric Administration Fisheries candidate species.

Federal laws and regulations pertaining to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act
- Sections 1600–1603 of the Fish and Game Code
- Section 4150 and 4152 of the Fish and Game Code

Affected Environment

Common wildlife species associated within the project area include passerines such as the mourning dove (*Zenaida macroura*), western scrub jay (*Aphelocoma coerulescens*), northern mockingbird (*Mimus polyglottos*), and house finch (*Carpodacus mexicanus*). Small mammals may also inhabit this area and include such species as the California ground squirrel, deer mouse (*Peromyscus maniculatus*), house mouse (*Mus musculus*), Botta pocket gopher *(Thomomys bottae*), and other burrowing mammals. The listed, proposed species, and critical habitat potential occurring or known to occur in the project area are displayed in Appendix C. The San Joaquin kit fox is discussed in Section 2.3.2, Threatened and Endangered Species.

The burrowing owl (*Athene cunicularia*) is a small, ground-dwelling owl with white eyebrows, yellow eyes, and long stilt-like legs (ESRP, 2005). These owls are found in open, dry grasslands, deserts and scrublands characterized by low-growing vegetation. Burrowing owls nest in the ground, usually using abandoned burrows built by small mammals. They are most active at dusk and dawn, hunting for large insects and small mammals.

Western mastiff bat (*Eumops perotis californicus)* is a member of the free-tailed bat family. The western mastiff bat is 5.5 to 7.5 inches long, with a wingspan of over 22 inches. It has chocolate brown fur and 30 teeth. These bats are insectivorous, and catch their food while they're flying.

Environmental Consequences

There would be no impacts to Species, Critical Habitat Potentially Occurring or Known to Occur in the Project Area since suitable habitat is not present within the biological study area. However, potential habitat exists for burrowing owls and Western mastiff bat occurrences have been document in the project vicinity. Burrowing owls and Western mastiff bats are a California species of concern.

The proposed project would not induce urban growth, nor would it increase access to adjacent habitat. Although burrowing owls were not observed during biological surveys, there are known occurrences within two miles of the project site. Although the existing abutments under the Pacheco Road undercrossing and South Bakersfield Overhead would be temporarily affected, the potential nesting habitat would be returned to pre-project conditions and is not expected to have a measureable cumulative effect to the burrowing owl. If burrowing owls are present during construction, temporary indirect impacts could occur from disturbance due to construction activities. Direct impacts to burrowing owls are not anticipated as the potential habitat would not be affected by construction activities.

Avoidance, Minimization, and/or Mitigation Measures

If construction activities take place near migratory birds, including burrowing owls, during the nesting season (February 15 to September 1), pre-construction surveys would be done to ensure no active nests are present that could be disturbed by construction activities. If an active nest is found, no construction activities would be allowed within a 100-foot radius of the nest until the birds have left the nest on their own.

If necessary, the contractor would use exclusion techniques as directed by the engineer to prevent migratory birds from nesting on the structures to ensure no impacts occur to migratory birds.

Pre-construction surveys would take place to locate burrowing owls. If burrowing owls are present, the California Department of State Fish and Game would be consulted and construction schedule would be altered or appropriate buffer zones created to ensure the owls are not disturbed. No burrowing owl habitat would be removed as part of this project, and no compensatory mitigation is proposed. Ground preparation would be scheduled after the breeding season (generally March through August) when all burrowing owl chicks in the region have fledged and are fully independent.

- The construction footprint would be surveyed before clearing and grubbing to determine whether owls have moved into the project area. If owls are found in this survey, a qualified biologist would be employed to excavate the burrows and remove any owls present. The emptied burrow, and any others found nearby, would be collapsed to preclude burrowing owls from returning to them.
- An authorized biologist would monitor the early stages of mechanized site preparations to verify no unnoticed owl burrows remain in the construction footprint.

Western mastiff bats may roost under Pacheco Road undercrossing and South Bakersfield Overhead at night, so limiting construction activities at these locations to the daytime would avoid any effect to this species.

2.3.2 Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 USC Section 1531, et seq. (see also 50 CFR Part 402). This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration Fisheries to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an Incidental Take statement. Section 3 of the Federal Endangered Species Act defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act, California Fish and Game Code, Section 2050, et seq. The State Endangered Species Act emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project caused losses of listed species populations and their essential habitats. The California Department of Fish and Game is the agency responsible for implementing the State Endangered Species Act. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

The State Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions, an incidental take permit is issued by California Department of Fish and Game. For projects requiring a Biological Opinion under Section 7 of the Federal Endangered Species Act, the California Department of Fish and Game may also authorize impacts to the state endangered species by issuing a consistency determination under Section 2080.1 of the Fish and Game Code.

Affected Environment

The San Joaquin kit fox is threatened or endangered and may be affected by the proposed project

San Joaquin kit fox

The San Joaquin kit fox is the only threatened or endangered species with potential to occur in the proposed project vicinity. The San Joaquin kit fox is a federally endangered and state threatened species. The San Joaquin kit fox is the smallest fox in North America, with an average body length of 20 inches and weight of about five pounds. They have large ears that are set close together, a slim body, and long, bushy, black-tipped tail carried low and straight. Their coat ranges from a buff-tan in the summer to silver-grey in the winter with the undersides varying from light buff to white in color (U.S. Fish and Wildlife Service, 1998).

San Joaquin kit foxes are active year-round and inhabit grassland, scrubland, oak woodland, alkali sink scrubland, and vernal pool and alkali meadow communities, but are also known to occur in extensively modified habitats such as oil fields and wind turbine facilities (U.S. Fish and Wildlife Service, 1998). Kit foxes are present, but generally less abundant, in other highly modified landscapes such as agricultural row crops, irrigated pastures, orchards, and vineyards.

The San Joaquin kit fox requires underground dens for temperature regulation, shelter, reproduction, and predator avoidance. Kit foxes dig their own dens, but also commonly modify and use dens constructed by other animals. Dens are typically located on loose-textured soils on slopes less than 40 degrees. Kit foxes also frequently use human-made structures (culverts, abandoned pipelines, or banks in sumps or roadbeds) as den sites.

Since the project is in an area known to support the San Joaquin Valley kit fox, no surveys to confirm presence were conducted, but during reconnaissance and general surveys, existing habitat was evaluated for potential use by the San Joaquin kit fox. A potential den was located on the abutment supporting the Pacheco Road Undercrossing. Although this location is on a steep slope there were four entrances that potentially could have been used by the San Joaquin kit fox. Three of the entrances appeared to not be active as there were cobwebs and debris covering the entrance. One appeared to be clear and was keyhole shaped, typical of kit fox dens, while the others were larger and irregular in shape. On January 31, 2011, Caltrans biologists Carrie Blickenstaff and Frank Meraz set up specialized cameras in an attempt to confirm or deny that the den was being used. One camera was set near the

entrance of the most apparently active entrance and other was setup at the toe of the abutment where several carnivorous animals were observed.

The location of the potential den was near several car dealerships and immediately adjacent to the entrance (within 25 feet) was a typical location for employees to park along Pacheco Road. The high traffic of the location required the Caltrans biologists to "stake out" the camera setup to prevent theft. The vehicle was parked far enough away to conceal the biologists but close enough to view the entrances with night vision equipment in the event any wildlife was observed but out of range of the cameras.

The cameras were in place and ready to capture at approximately 1630, well before dusk. The setup was left in place for approximately 5 hours with no animals observed except for a feral cat. Although no San Joaquin kit fox were observed, there is still potential for this den to be used during the night as a refuge den while foraging.

Environmental Consequences

San Joaquin kit fox

Most of the area in the project vicinity is currently occupied by residential, industrial or commercial uses. The majority of the impacts from this project would occur within the existing median which does not provide any suitable habitat for San Joaquin kit fox; however, the abutment for the Pacheco Road undercrossing which may be utilized as den habitat would be affected. In order to support the widening of the undercrossing the abutment, it would need to be expanded and two new columns would need to be installed. This activity would be well within the 250-foot buffer of this potential den.

In order to ensure no San Joaquin kit fox are injured or killed by construction activities, the potential den on the Pacheco Road abutment would be inspected and upon confirmation that it is not active, would be blocked to ensure kit fox will not move into the den during construction. The temporary blockage would be removed after construction.

Currently the median in the vicinity of the project consists of metal-beam guardrails surrounding thick oleander shrubs. This natural type barrier allows wildlife to cross the freeway at any point that is not too thickly covered by oleanders. For the proposed project, the new concrete barrier design would be continuous except for the spots where the passageway is installed. The new barrier design may expose wildlife to danger from vehicles for longer periods of time.

Avoidance, Minimization, and/or Mitigation Measures

San Joaquin kit fox

Since no San Joaquin kit fox habitat is being permanently removed as part of the project, no compensatory mitigation is being proposed. The proposed project would not induce urban growth, nor would it increase access to adjacent habitat. The concrete median barrier would be continuous, unlike the metal beam guard rail; however, it would contain openings at prescribed distances that would allow fox and other wildlife to pass. Although the existing den under the Pacheco Road undercrossing would be temporarily affected, and because this den is atypical and in artificial habitat, the proposed project would not anticipated to have a measurable cumulative effect on San Joaquin kit fox populations.

In addition to the modified design and limiting major components of the construction activities to the daytime, the following precautionary measures would be implemented to avoid and minimize impacts to kit fox:

- At the end of each working day the contractor would take measures to prevent the entrapment of San Joaquin kit foxes in all excavated, steep-walled holes or trenches. These measures would include covering excavations with plywood or providing dirt or plank escape ramps. The contractor would also inspect all pipes and culverts before burying, capping or other activities. If a San Joaquin kit fox is discovered during this inspection, the pipe or culvert would not be disturbed (other than to move it to a safe location if necessary) until after the fox has escaped.
- The contractor would immediately notify the engineer if a dead, injured or entrapped San Joaquin kit fox is found. All construction activity within 200 feet of the kit fox would be halted and may not resume until the engineer provides written authorization. Any entrapped kit fox would be permitted to escape. No injured or dead kit fox may be handled or otherwise disturbed.
- If a San Joaquin kit fox den is discovered, all construction activity within a 150 foot radius of the den would be halted and the Engineer would be contacted immediately. Construction may not continue within the 150 foot radius until the engineer provides written authorization.
- Prior to the initiation of groundbreaking, a Caltrans biologist would conduct an education and training session for all construction personnel. All individuals who would be involved in the site preparation or construction would be present, including the project representative(s) responsible for reporting injuries or deaths of animals to the U.S. Fish and Wildlife Service and California Department of Fish

and Game. Training sessions would be repeated for all new employees before they begin work at the project site.

- All food-related trash items such as wrappers, cans, bottles and food scraps would be disposed of in closed containers and removed at least once every day from the entire project site.
- In addition to these precautionary measures, pre-construction surveys within the project area would be conducted no more than 30 calendar days before construction starts in accordance with the most current protocols approved by the U.S. Fish and Wildlife Service and California Department of Fish and Game. A concurrence that the proposed project is not likely to adversely affect San Joaquin kit fox is currently being sought from the U.S. Fish and Wildlife Service.
- Modified S-Type semicircular wildlife passageways would be installed in the concrete median barrier at prescribed intervals of 150 to 200 feet to allow for kit fox crossings (see Appendix E-Comments and Responses under U.S. Fish and Wildlife Service Concurrence letter dated June 17, 2011).

2.4 Climate Change under the California Environmental Quality Act

Regulatory Setting

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change, the efforts devoted to greenhouse gas emissions reduction and climate change research and policy have increased dramatically in recent years. These efforts are primarily concerned with the emissions of greenhouse gas emissions related to human activity that include carbon dioxide (CO_2), methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2 –tetrafluoroethane), and HFC-152a (difluoroethane).

In 2002, with the passage of Assembly Bill 1493, California launched an innovative and pro-active approach to dealing with greenhouse gas emissions and climate change at the state level. Assembly Bill 1493 requires the California Air Resources Board develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year; however, in order to enact the standards California needed a waiver from the U.S. Environmental Protection Agency. The waiver was denied by Environmental Protection Agency in

December 2007 and efforts to overturn the decision had been unsuccessful (see *California v. Environmental Protection Agency*, 9th Cir. Jul. 25, 2008, and No. 08-70011).

On January 26, 2009, it was announced that U.S. Environmental Protection Agency would reconsider their decision regarding the denial of California's waiver. On May 18, 2009, President Obama announced the enactment of a 35.5 mpg fuel economy standard for automobiles and light duty trucks which would take effect in 2012. On June 30, 2009, the U.S. Environmental Protection Agency granted California the waiver. California is expected to enforce its standards for 2009 to 2011 and then look to the federal government to implement equivalent standards for 2012 to 2016. The granting of the waiver will also allow California to implement even stronger standards in the future. The state is expected to start developing new standards for the post-2016 model years later this year.

On June 1, 2005, then-Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's greenhouse gas emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32, the Global Warming Solutions Act of 2006. Assembly Bill 32 sets the same overall greenhouse gas emissions reduction goals while further mandating that California Air Resources Board create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing Assembly Bill 32, including the recommendations made by the state's Climate Action Team. With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and greenhouse gas reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing greenhouse gas emissions reductions and climate change. California, in conjunction with several environmental organizations and several other states, sued to force the U.S. Environmental Protection Agency to regulate greenhouse gases as a pollutant under the Clean Air Act (Massachusetts vs. Environmental Protection Agency et al., 549 U.S. 497 (2007). The court ruled that greenhouse gas does fit within the Clean Air Act's definition of a pollutant, and that the U.S. Environmental Protection Agency does have the authority to regulate greenhouse gases. Despite the

Supreme Court ruling, there are no promulgated federal regulations to date limiting greenhouse gas emissions.

On December 7, 2009, the U.S. Environmental Protection Agency administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. Environmental Protection Agency's *Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles*, which was published on September 15, 2009[1]. On May 7, 2010, the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards* was published in the Federal Register[2].

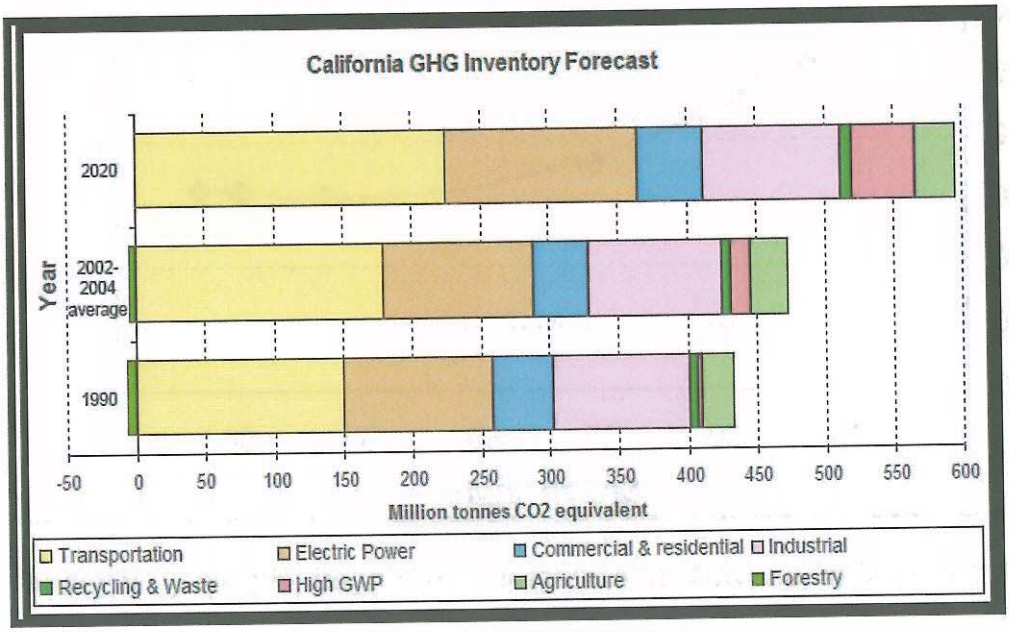
The final combined U.S. Environmental Protection Agency and National Highway Traffic Safety Administration standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards will cut greenhouse gas emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012 to 2016).

According to *Recommendations by the Association of Environmental Professionals on How to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA*

[1] http://www.epa.gov/climatechange/endangerment.html
[2]http://www.regulations.gov/search/Regs/contentStreamer?objectId=0900006480a5e7f1&disposition=attachment&contentType=pdf

Documents (March 5, 2007), an individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of greenhouse gas. In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See California Environmental Quality Act Guidelines sections 15064(i)(1) and 15130. To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult if not impossible task.

As part of its supporting documentation for the Draft Scoping Plan, CARB recently released an updated version of the greenhouse gas inventory for California (June 26, 2008). Shown below is a graph from that update that shows the total greenhouse gas emissions for California for 1990, 2002-2004 average, and 2020 projected if no action is taken (Figure 2.7 California Greenhouse Gas Inventory Sources).



Source: http://www.arb.ca.gov/cc/inventory/data/forecast.htm

Figure 2-7 California Greenhouse Gas Inventory Sources

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing greenhouse gas emission reduction and climate change. Recognizing that 98 percent of California's greenhouse gas emissions

are from the burning of fossil fuels and 40 percent of all human made greenhouse gas emissions are from transportation. Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006. This document can be found at: htt://www.dot.ca.gov/docs/Climate.

One of the main strategies in Caltrans's Climate Action Program to reduce greenhouse gas emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0 to 25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0 to 25 miles per hour (Figure 2-8). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors greenhouse gas emissions, particularly CO_2, may be reduced.

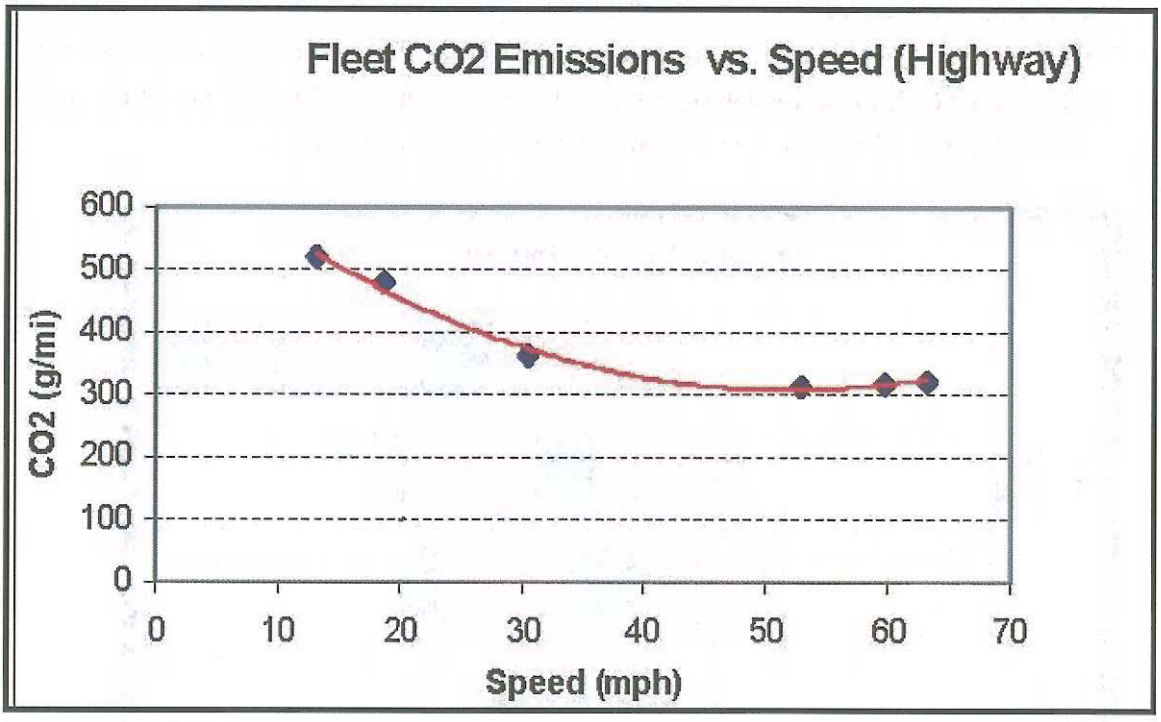


Figure 2-8 Fleet Carbon Dioxide Emissions vs. Speed (Highway) Project Analysis

The primary purpose of the South Bakersfield 8-Lane Project is to improve traffic operations and reduce congestion on State Route 99 between Wilson Road and Panama Road (State Route 119). By reducing the length of time that vehicles are idling in traffic queues (lines) and improving the flow of traffic with the proposed project, it is anticipated that carbon dioxide emissions would be reduced when

comparing the future build conditions to the future no-build conditions and increase connectivity of the local system. While reducing congestion and increasing connectivity would likely lead to reductions in carbon dioxide emissions, an increase in the number of vehicles that the widened facility would accommodate is also anticipated as the population in Kern County increases from 765,190 in 2005 to 1.7 million by 2050. As the population grows, the number of vehicles using State Route 99 should also increase. Currently, this portion of State Route 99 is experiencing level of service F during peak hours. If the project was not constructed, level of service would continue to deteriorate. The Build Alternative would result in less congestion and an improved level of service (Tables 2.11 and 2.12).

Table 2.11 Average Daily Traffic and Level of Service

Existing 2007		BUILD 2015		NO-BUILD 2015		BUILD 2035		NO-BUILD 2035	
AADT	LOS	AADT	LOS	AADT	LOS	AADT	LOS	AADT	LOS
54,500	F	92,794	C	92,794	D	118,747	D	109,715	E

Source: Caltrans District 6 transportation Operations 2010

Table 2.12 Estimated Tons/Year Carbon Dioxide Emissions

Alternative	2007	2015	2035
No-build	176	297	342
Alternative 1	N/A	256	330

Source: Caltrans Central Region Environmental Engineering January 2011

With the current science, project-level analysis of greenhouse gas emissions is limited. Although a greenhouse gas analysis is included for this project, there are numerous key greenhouse gas variables that are likely to change dramatically during the design life of the proposed project and would thus dramatically change the projected CO_2 emissions.

Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction greenhouse gas emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions

arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the greenhouse gas emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

California Environmental Quality Act Conclusion

Environmental Consequences

Based on the project resulting in less congestion and improved operations, Caltrans anticipates that greenhouse gas emissions would decrease in the future build conditions when compared to the future no build conditions. It is Caltrans' determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and California Environmental Quality Act significance, it is too speculative to make a determination regarding significance of the project's direct impact and its contribution on the cumulative scale to climate change. However, Caltrans is firmly committed to implementing measures to help reduce the potential effects of the project.

Assembly Bill 32 Compliance

Caltrans continues to be actively involved on the Governor's Climate Action Team as California Air Resources Board works to implement the governor's executive orders and help achieve the targets set forth in Assembly Bill 32. Many of the strategies Caltrans is using to help meet the targets in Assembly Bill 32 come from the California Strategic Growth Plan, which is updated each year. Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a $222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including $100.7 billion in transportation funding during the next decade. As shown on the Figure 2.6, the Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in greenhouse gas emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together yield the promised reduction in congestion. The Strategic Growth Plan relies on a complete systems approach of a variety of strategies: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements.

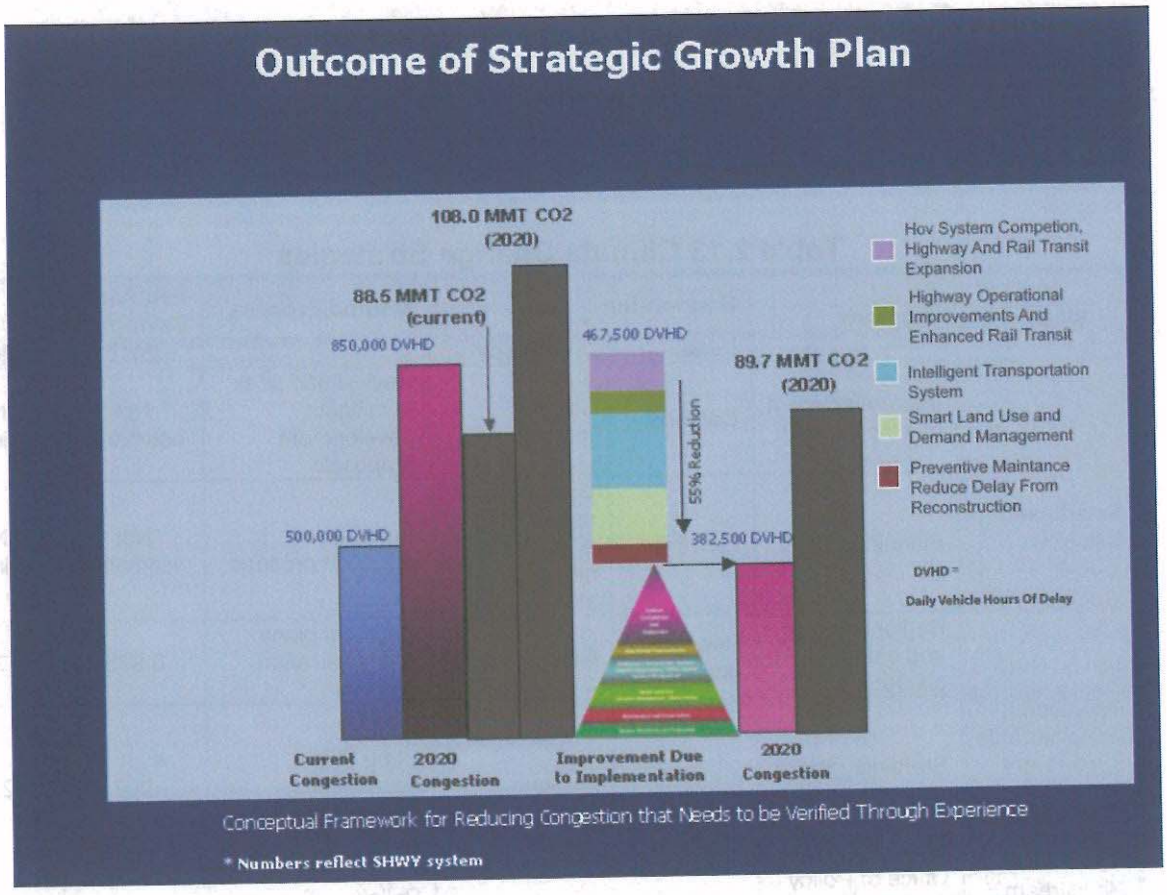


Figure 2.9 Outcome of Strategic Growth Plan
Source: http://www.dot.ca.gov/docs/ClimateReport.pdf

As part of the Climate Action Program at Caltrans (December 2006, http://www.dot.ca.gov/docs/ClimateReport.pdf), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority. Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting on-going research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by the U.S. Environmental Protection Agency and the California Air Resources Board. Lastly, the use of alternative fuels is also being considered; Caltrans is participating in funding for alternative fuel research at the University of California at Davis.

Table 2.13 summarizes Caltrans and statewide efforts that Caltrans is implementing in order to reduce greenhouse gas emissions. For more detailed information about each strategy, please see Climate Action Program at Caltrans (December 2006); it is available at http://www.dot.ca.gov/docs/ClimateReport.pdf.

Table 2.13 Climate Change Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO2 Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental review (IGR)	Caltrans	Local governments	Review and seek to mitigate development proposals	Not estimated	Not estimated
	Planning grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not estimated	Not estimated
	Regional plans and blueprint planning	Regional agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational improvements & Intelligent Trans. System (ITS) deployment	Strategic growth plan	Caltrans	Regions	State ITS; congestion management plan	.007	2.17
Mainstream energy & greenhouse gas into plans and projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not estimated	Not estimated
Education & information program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, CARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not estimated	Not estimated
Fleet greening & fuel diversification	Division of Equipment	Department of General Services		Fleet replacement B20 B100	0.0045	0.0065 0.45 .0225
Non-vehicular conservation measures	Energy conservation program	Green Action Team		Energy conservation opportunities	0.117	.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 .36	3.6
Goods movement	Office of Goods Movement	Cal EPA, CARB, BT&H, MPOs		Goods Movement Action Plan	Not estimated	Not estimated
Total					2.72	18.67

The following measures would also be included in the proposed project to reduce the greenhouse gas emissions and potential climate change impacts:

- Caltrans and the California Highway Patrol are working with regional agencies to implement Intelligent Transportation Systems to help manage the efficiency of the existing highway system.
- Generally, trees reduce surface warming, and through photosynthesis and decrease carbon dioxide. The project proposes planting in the intersection slopes, drainage channels, and in areas adjacent to the roads. A variety of trees, shrubs, ground cover, and native grasses would be planted. Caltrans has committed to planting vegetation and trees.
- The proposed project would incorporate the use of energy efficient lighting, such as LED traffic signals. LED bulbs consume 10 percent of the electricity of traditional lights, which would also help reduces surface warming.
- The following environmental friendly practices and materials would be used in the project as part of highway planting and erosion control work:
    - PVC irrigation pipe with recycled content
    - Non-chlorinated high density polyethylene irrigation crossover conduit
    - Compost and soil amendments derived from sewage sludge and green waste materials and wood mulch made from green waste and/or clean manufactured wood or natural wood
    - Irrigation controllers that include water conservation features and would use reclaimed water where feasible if it becomes available.
    - Native and drought tolerant plant species and with restricted and reduced use of pesticides in landscape maintenance.

Adaptation Strategies

"Adaptation strategies" refer to how Caltrans and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damaging roadbeds by longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects would vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may

also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

Climate change adaption must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-Governor Schwarzenegger signed Executive Order S-13-08 which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change.

The California Resources Agency (now the Natural Resources Agency), through the interagency Climate Action Team, was directed to coordinate with local, regional, state and federal public and private entities to develop a state Climate Adaptation Strategy. The Climate Adaptation Strategy will summarize the best known science on climate change impacts to California, assess California's vulnerability to the identified impacts and then outline solutions that can be implemented within and across state agencies to promote resiliency.

As part of its development of the Climate Adaptation Strategy, Resources Agency was directed to request the National Academy of Science to prepare a *Sea Level Rise Assessment Report* by December 2010 to advise how California should plan for future sea level rise. The report is to include:

- Relative sea level rise projections for California, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates.
- The range of uncertainty in selected sea level rise projections.
- A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems.
- A discussion of future research needs regarding sea level rise for California.

Furthermore Executive Order S-13-08 directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance and operational improvements of the system and economy of the state. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise. Prior to the release of the final *Sea Level Rise Assessment Report*, all state

agencies that are planning to construct projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. However, all projects that have filed a Notice of Preparation, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects as of the date of Executive Order S-13-08 may, but are not required to, consider these planning guidelines. Sea level rise estimates should also be used in conjunction with information regarding local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data. (Executive Order S-13-08 allows some exceptions to this planning requirement.) The project was programmed for construction in 2012. The South Bakersfield 8-Lane Project was approved by the California Transportation Commission to be included in a statewide demonstration program to use the design-build process.

This process allows the state to advertise a project prior to the design being completed. The project is not subject to tsunami or ocean tides. Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is an active participant in the efforts being conducted as part of Governor's Schwarzenegger's Executive Order on Sea Level Rise and is mobilizing to be able to respond to the National Academy of Science report on *Sea Level Rise Assessment* which is due to be released by December 2010.

On August 3, 2009, the Natural Resources Agency in cooperation and partnership with multiple state agencies released the 2009 California Climate Adaptation Strategy Discussion Draft, which summarizes the best known science on climate change impacts in seven specific sectors and provides recommendations on how to manage against those threats. The release of the draft document set in motion a 45-day public comment period. Led by the California Natural Resources Agency, numerous other state agencies were involved in the creation of discussion draft, including Environmental Protection; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The discussion draft focuses on sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. The strategy is in direct response to then-Governor Schwarzenegger's

November 2008 Executive Order S-13-08 that specifically asked the Natural Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings. A revised version of the report was posted on the Natural Resource Agency website on December 2, 2009. The report can be viewed at http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF.

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change impacts, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will be able review its current design standards to determine what changes, if any, may be warranted in order to protect the transportation system from sea level rise.

Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including project development team meetings, interagency coordination meetings. This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

Coordination with Public Agencies

An interagency consultation for PM_{10} and $PM_{2.5}$ hot-spot conformity started on April 20, 2011 with the San Joaquin Valley Model Coordinating Committee to concur that the project is a project of air quality concern. Status is pending.

Coordination with Native American Groups

On December 8, 2010 the Native American Heritage Commission was consulted to conduct a Sacred Lands Inventory Search and to provide a list of Native American groups to be contacted about the project. Dave Singleton of the Native American Heritage Commission responded on December 16, 2010 stating their files showed that Native American cultural resources were not identified within one-half mile of the project area. Mr. Singleton also provided a list and recommendations for further tribal consultation.

The Native American Heritage Commission identified the following tribal groups as having potential knowledge or interest in the proposed project. On January 10, 2011, information specific to the project was sent to the following identified individuals:

- Tule River Indian Reservation, Chairman Ryan Garfield
- Tule River Indian Reservation, Ms. Keri Vera, Environmental Protection Agency Coordinator
- Kitanemuk and Yowlumne Tejon Indians, Chairwoman Delia Dominguez
- Tejon Indian Tribe, Chairwoman Kathy Montes-Morgan
- Tejon Indian Tribe, Ken Morgan-Native American Monitor
- Chumash Council of Bakersfield, Chairwoman Arianne Garcia
- Kern Valley Indian Council, Co-Chairman Robert Robinson
- Kawaiisu Tribe of Tejon Reservation, Chairman David Laughinghorse Robinson.

- Tubatulabals of Kern Valley, Chairwoman Donna Begay
- Santa Rosa Rancheria Tachi Yokuts, Chairman Ruben Barrios and Mr. Lalo Franco, Cultural Resources Director

The Caltrans archaeology study did not find any archaeological resources within the project. Responses received did not identify cultural resources within the immediate limits of the proposed project.

Coordination with U.S. Fish and Wildlife Service

On August 25, 2010, a Caltrans biologist obtained a species list for federally threatened or endangered species that occur or may be affected by the project from U.S. Fish and Wildlife Service. This list was revised on January 14, 2011. Caltrans received a letter of concurrence from the U.S. Fish and Wildlife Service on June 17, 2011; the Fish and Wildlife Service concurred with the determination that the proposed project is not likely to adversely affect the San Joaquin kit fox and no further coordination with the Fish and Wildlife Service under the Endangered Species Act of 1973 is necessary at this time (see Appendix-E Comments and Reponses).

Public Circulation

Caltrans posted the public notice of the proposed project in the Bakersfield Californian on May 16, 2011 in addition to sending out letters to local government officials in the project area. Caltrans provided two sets of hard copies of the project draft environmental document to two local libraries. A digital copy was also posted on the Caltrans District 6 website.

The draft environmental document circulated for public comments from May 17, 2011 to June 15, 2011. Caltrans received four response letters from local and state agencies. Response letters and Caltrans' comments are in Appendix E.

Chapter 4 List of Preparers

This document was prepared by the following Caltrans Central Region staff:

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Appendix A California Environmental Quality Act Checklist

The following checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. The California Environmental Quality Act impact levels include "potentially significant impact," "less than significant impact with mitigation," "less than significant impact," and "no impact."

Supporting documentation of all California Environmental Quality Act checklist determinations is provided in Chapter 2 of this Initial Study/Environmental Assessment. Documentation of "No Impact" determinations is provided at the beginning of Chapter 2. Discussion of all impacts, avoidance, minimization, and/or mitigation measures is under the appropriate topic headings in Chapter 2.

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive Receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

IV. BIOLOGICAL RESOURCES: Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

V. CULTURAL RESOURCES: Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

VI. GEOLOGY AND SOILS: Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

VII. GREENHOUSE GAS EMISSIONS: Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans' determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

IX. HYDROLOGY AND WATER QUALITY: Would the project:

a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b)Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
XI. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
(f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
XIV. PUBLIC SERVICES:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Appendix B Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

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July 20, 2010

TITLE VI
POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact Charles Wahnon, Manager, Title VI and Americans with Disabilities Act Program, California Department of Transportation, 1823 14th Street, MS-79, Sacramento, CA 95811. Phone: (916) 324-1353 or toll free 1-866-810-6346 (voice), TTY 711, fax (916) 324-1869, or via email: charles_wahnon@dot.ca.gov.

CINDY McKIM
Director

"Caltrans improves mobility across California"

Appendix C Listed, Proposed Species, and Critical Habitat Potentially Occuring or Known to Occur in the Project Area.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present (P)/ Absent (A)	Rationale
American badger	*Taxidea taxus*	SSC	Drier open stages of most shrub, forest, and herbaceous habitats, with friable soils	A	Suitable habitat is not present within the BSA.
Bakersfield cactus	*Opuntia basilaris var. treleasei*	FE, SE	This plant occurs in coarse or cobbly well-drained granitic sand on bluffs, low hills, and flats within chenopod scrubs, cismontane woodlands and grasslands.	A	Suitable habitat is not present within the BSA. No occurrences have been recorded for this species within the vicinity of the project site.
Bakersfield smallscale	*Atriplex tularensis*	SE, 1B.1	This plant occurs in chenopod scrub habitats.	A	Suitable habitat is not present within the BSA.
Blunt-nosed leopard lizard	*Gambelia sila*	FE, SE	Sparsely vegetated alkali and desert scrub habitat, in area of low topographic relief, uses mammal burrows for cover	A	Suitable habitat is not present within the BSA. No occurrences have been recorded for this species within the vicinity of the project site.
Buena Vista Lake shrew	*Sorex ornatus relictus*	FE	The Buena Vista Lake shrew inhabits areas with a dense mesophytic, cover and an abundant layer of litter.	A	Suitable habitat is not present within the BSA. No occurrences have been recorded for this species within the vicinity of the project site.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present (P)/ Absent (A)	Rationale
Burrowing owl	*Athene cunicularia*	SSC	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation, subterranean nester	P	There are active ground squirrel burrows that could provide nesting habitat if abandoned. No burrowing owls were detected during surveys.
California chalk moss	*Pterygoneurum californicum*	1B.1	This plant occurs in chenopod scrub and Valley and foothill grasslands with alkali soils.	A	Suitable habitat is not present within the BSA and this species is presumed to be extinct in California.
California condor	*Gymnogyps californianus*	FE	This species occurs in the semi-arid, rugged mountain ranges surrounding the southern San Joaquin Valley, including the Coast Ranges from Santa Clara Co. south to Los Angeles Co., the Transverse Ranges, Tehachapi Mts., and southern Sierra Nevada.	A	Suitable habitat is not present within the BSA. No occurrences have been recorded for this species within the vicinity of the project site.
California jewel flower	*Caulanthus californicus*	FE, SE, 1B.1	Chenopod scrub, valley and foothill grassland, pinyon-juniper woodland	A	Suitable habitat is not present within the BSA. No occurrences have been recorded for this species within the vicinity of the project site.
California red-legged frog	*Rana draytonii*	FT	Occurs in small streams, ponds and marshes, preferably with dense shrubby vegetation such as cattails and willows near deep water pools.	A	Suitable habitat is not present within the BSA. No occurrences have been recorded for this species within the vicinity of the project site.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present (P)/ Absent (A)	Rationale
California satintail	*Imperata brevifolia*	2.1	Found in chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps, and riparian scrub.	A	Suitable habitat is not present within the BSA. No occurrences have been recorded for this species within the vicinity of the project site.
California tiger salamander, central population	*Ambystoma californiense*	FT, ST	Open savannah, grasslands and foothill chaparral. Nests on mountains, gorges, and hillsides, which create updrafts, thus providing favorable soaring conditions.	A	Suitable savannah, grasslands and foothill chaparral habitat is not present within the BSA.
Conservancy fairy shrimp	*Branchinecta conservatio*	FE	Occurs in rather large, cool-water vernal pools with moderately turbid water.	A	Suitable habitat is not present within the BSA.
Delta smelt	*Hypomesus transpacificus*	FT	Found only in the Sacramento and San Joaquin estuaries of the San Francisco Bay	A	Suitable habitat is not present within the BSA.
Giant garter snake	*Thamnophis gigas*	FT	Requires permanent or semi-permanent marshes and sloughs	A	Suitable habitat is not present within the BSA.
Giant kangaroo rat	*Dipodomys ingens*	FE	Giant kangaroo rats are associated with annual grasslands on the western side of the San Joaquin valley and have marginal habitat in alkali scrub. They require level terrain and sandy loam soils for burrowing.	A	Suitable habitat is not present within the BSA.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present (P)/ Absent (A)	Rationale
Hoary bat	*Lasiurus cinereus*	*	Solitary and roost primarily in foliage of both coniferous and deciduous trees, near the ends of branches, approximately 10-40 feet above the ground.	P	Several large eucalyptus trees are present within the project limits, however there is no tree removal anticipated with the proposed project.
Horn's milk-vetch	*Astragalus hornii var. hornii*	1B.1	This plant occurs in meadows and seeps, playas/lake margins and alkali sinks.	A	Suitable habitat is not present within the BSA.
Keck's checker-mallow	*Sidalcea keckii*	FE	Occurs on 20 to 40 percent slopes of red or white-colored clay in sparsely-vegetated annual grasslands in the San Joaquin Valley. The clays are thought to be derived from serpentine (magnesian or ultramafic) soils.	A	Slopes of red or white-colored clay in sparsely-vegetated annual grasslands are not present within the BSA.
Kern mallow	*Eremalche kernensis*	FE	This species occurs in chenopod scrub and Valley and foothill grasslands.	A	Suitable habitat is not present within the BSA.
Kern primrose sphinx moth	*Euproserpinus euterpe*	FT	This species is only known to inhabit two sites, the Carrizo Plain and the Walker Basin northeast of Bakersfield. Dependent on evening primrose.	A	Suitable habitat is not present within the BSA.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present (P)/ Absent (A)	Rationale
Kern shoulderband	*Helminthoglypta callistoderma*	SOC	Kern shoulderband is known only from the Kern River; species has not been reported since 1916	A	Suitable habitat is not present within the BSA.
Least bell's vireo	*Vireo bellii pusillus*	FE	Riparian habitats dominated by willows with dense understory vegetation.	A	Suitable riparian habitat dominated by willows with dense understory vegetation is not present within the BSA.
Recurved larkspur	*Delphinium recurvatum*	1B.2	This plant species is commonly found in chenopod scrub, valley and foothill grassland and cismontane woodland.	A	Suitable habitat is not present within the BSA.
San Joaquin adobe sunburst	*Pseudobahia peirsonii*	FT	Associated with abode clay soils within foothill woodlands and grasslands.	A	Suitable habitat is not present within the BSA.
San Joaquin kit fox	*Vulpes macrotis mutica*	FE, ST	Annual grasslands or grassy open stages with scattered shrubby vegetation	P	Suitable habitat is present within the BSA.
San Joaquin woolythreads	*Monolopia congdonii*	FE	This plant occurs in chenopod scrublands and in Valley and foothill grasslands.	A	Suitable habitat is not present within the BSA. No occurrences have been recorded for this species within the vicinity of the project site.
Silvery legless lizard	*Anniella pulchra pulchra*	SSC	Occur primarily in areas with sandy or loose loamy soils.	A	Suitable habitat is not present within the BSA. No occurrences have been recorded for this species within the vicinity of the project site.
Sierra Nevada bighorn sheep	*Ovis Canadensis californiana*	FE, SFPS	Alpine to Great Basin sagebrush scrub with visual openness and close proximity to steep rocky terrain.	A	Suitable habitat is not present within the BSA. No occurrences have been recorded for this species within the vicinity of the project site.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present (P)/ Absent (A)	Rationale
Southwestern willow flycatcher	*Empidonax traillii extimus*	FE	Southwestern willow flycatchers are rare to locally common, summer residents in wet meadow and montane riparian habitats in the Sierra Nevada and Cascade Range. Most often occur in broad, open river valleys or large mountain meadows with lush growth of shrubby willows.	A	Suitable habitat is not present within the BSA. No occurrences have been recorded for this species within the vicinity of the project site.
Tipton kangaroo rat	*Dipodomys nitratoides nitratoides*	FE, SE	Saltbush scrub and sink scrub communities in the Tulare Lake basin of the southern San Joaquin Valley	A	Suitable habitat is not present within the BSA. No occurrences have been recorded for this species within the vicinity of the project site.
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT	Valley elderberry longhorn beetles are associated with elderberry trees (*Sambucus* spp.) in the Central Valley.	A	Suitable habitat is not present within the BSA. No occurrences have been recorded for this species within the vicinity of the project site.
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	Endemic to the grasslands of the Central Valley, central and south coast mountains, in astatic rain-filled pools	A	Suitable habitat is not present within the BSA. No occurrences have been recorded for this species within the vicinity of the project site.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present (P)/ Absent (A)	Rationale
Western mastiff bat	*Eumops perotis californicus*	SSC	Roosts in crevices in cliff faces, high buildings, trees and tunnels. In California, most commonly encountered in broad open areas, but occurs in many semi-arid to arid habitats. This includes dry desert washes, flood plains, conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, montane meadows, palm oases, chaparral, desert scrub, urban, and agricultural areas.	P	Potential night roosting habitat exists under the Pacheco Road Undercrossing and South Bakersfield Overhead, however by limiting construction activities at these locations to the daytime will avoid any effect to this species.
Western snowy plover	*Charadrius alexandrines nivosus*	FT	Sandy beaches, salt pond levees, and shores of large alkali lakes in northeastern California, Central Valley, and southeastern deserts.	A	Suitable habitat of sandy beaches, salt pond levees, and shores of large alkali lakes are not present within the BSA.
Critical Habitat					
Longhorn fairy shrimp	*Branchinecta longiantenna*	X		A	No designated critical habitat for this species exists within the BSA.
California red-legged frog	*Rana draytonii*	X		A	No designated critical habitat for this species exists within the BSA.
Vernal pool fairy shrimp	*Branchinecta lynchi*	X		A	No designated critical habitat for this species exists within the BSA.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present (P)/ Absent (A)	Rationale
Buena Vista Lake shrew	*Sorex ornatus relictus*	X		A	No designated critical habitat for this species exists within the BSA.
California tiger salamander, central population	*Ambystoma californiense*	X		A	No designated critical habitat for this species exists within the BSA.
Southwestern willow flycatcher	*Empidonax traillii extimus*	X		A	No designated critical habitat for this species exists within the BSA.
California condor	*Gymnogyps californianus*	X		A	No designated critical habitat for this species exists within the BSA.
Keck's checker-mallow	*Sidalcea keckii*	X		A	No designated critical habitat for this species exists within the BSA.
Great Valley Cottonwood Riparian Forest		Rare	A dense, broadleafed, winter-deciduous riparian forest dominated by Fremont cottonwood (*Populus fremontii*) and Goodding's willow (*Salix goodingii*).	A	No riparian habitat is present within BSA.

Key for Table:

FE – Federally endangered
FT – Federally threatened
SOC – Federal species of concern
SE – State endangered
SSC – State species of concern
SFPS – State fully protected species
1B.1 – Rare, threatened, or endangered in California and elsewhere
Rare – Threatened or endangered in California but more common elsewhere
X – Critical habitat has been designated for this species
* – No formal listing status for this species has been designated

Appendix D Minimization and/or Mitigation Summary

Environmental commitments for the project are described in the Avoidance, Minimization, and/or Mitigation sections in their respective environmental categories in this Initial Study. This section summarizes these environmental commitments.

Traffic and Transportation/Pedestrian and Bicycle Facilities

The proposed widening of the mainline would ease congestion while maintaining the existing traffic connections and movements between State Routes 99, 119, and 58. The Traffic Management Plan would be designed to minimize delays and maximize safety for motorists and construction crews prior to construction. The Traffic Management Plan would include, but is not limited to:

- Information brochures and mailers, press releases, and advertisements released by the Public Information Office as well as coordinated by City and Caltrans.
- Use of fixed and portable changeable message signs.
- Construction Zone Enhancement Enforcement Program managed the Transportation Management Center.
- Night work and project phasing.

Visual/Aesthetics

To increase the potential of successful slope re-vegetation and stabilization, the angle of the slopes would be 1–to-4 or flatter and would be graded so they have rounded tops and bottoms. Any mature vegetation currently existing within the right-of-way should be preserved or replaced where possible. Replacement planting would be included to soften the impact of the widened roadway. Tree and shrub species would be consistent with those located on or near State Route 99. To reduce glare from the additional reflective surfaces, accent colors would be added to bridge structures to match the accepted bridge accent color of Kern County.

The proposed aesthetic treatments would be coordinated through the Caltrans District Landscape Architecture unit, City of Bakersfield and the Bridge Aesthetics unit in Caltrans Headquarters. In addition, bridge accent colors such as teal green would be added to bridge structures to match the accepted bridge accent color of Kern County. The implementation of these recommendations would minimize the visual impacts and lessen the considerable changes in the overall visual quality within the project limits.

Hazardous Waste or Materials

In accordance with San Joaquin Valley Air Pollution Control District (air pollution district) Regulation IV, Rule 4002, written notification to the air pollution district is required ten working dates prior to commencement of any demolition activity (whether asbestos is present or not).

Per Caltrans' requirements, the contractor(s) would prepare a project-specific Lead Compliance Plan (CCR Title 8, Section 1532.1, the "Lead in Construction" standard) to minimize worker exposure to lead-impacted soil. The plan would include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other health and safety protocols and procedures for the handling of lead-impacted soil.

All paints within the project limits to be treated as lead containing for purposes of determining the applicability of the California Division of Occupational Safety and Health (Cal/OSHA), lead standard during any future maintenance, renovation, and demolition activities. This recommendation is based on lead-containing paint sample results and the fact that lead was a common ingredient of paints manufactured before 1978 and is still an ingredient of some paints. In accordance with Title 8, CCR, Section 1532.1(p), written notification to the nearest Cal/OSHA district office is required at least 24 hours prior to certain lead related work.

Air Quality

Project design includes paved shoulders which should minimize particulate matter and re-entrained dust. A rough estimate of the project acreage and scope indicates that this project would be subject to the San Joaquin Valley Air Pollution Control District rule 9510 (Indirect Source Review), requiring mitigating NOx and PM_{10} construction emissions. Caltrans is now requiring contractors to be responsible for submitting the Rule 9510 Air Impact Analysis and related fees, as well as the dust control plan to the Air District prior to beginning construction. When an Air Impact Analysis is required, the applicant has the choice to pay fees based on the amount of estimate emissions or to use a "cleaner than average" construction fleet. A cleaner than average fleet is a possible method to minimize and mitigate construction vehicle emissions.

Caltrans Standard Specifications pertaining to dust control and dust palliative requirement is a required part of all construction contracts and should effectively reduce and control emission impacts during construction. The provisions of Caltrans Standard Specifications, Section 7-1.0F "Air Pollution Control" and Section 10 "Dust Control" require the contractor to comply with the San Joaquin Valley Air Pollution Control District rules, ordinances, and regulations.

Short-Term Construction Impacts

During construction, the proposed project would generate air pollutants. The exhaust from construction equipment contains hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors. However, the largest percentage of pollutants would be windblown dust generated during excavation, grading, hauling, and various other activities. The impacts of these activities would vary each day as construction progresses.

Most of the construction impacts to air quality are short-term in duration so would not result in adverse or long-term conditions. The construction contractor would comply with Caltrans' Standard Specifications Section 7-1. Implementation of the following measures would reduce any air quality impacts resulting from construction activities. The contractor would apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions. Spread soil binder on any unpaved roads used for construction purposes and on all parking areas for project construction. Wash trucks off as they leave the right of way as necessary to control fugitive dust emissions. Properly tune and maintain construction equipment and vehicles.

Develop a special dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts to existing communities. Locate equipment and materials storage sites as far away from residential and park uses as practical and keep construction areas clean and orderly. Cover all transported loads of soils and wet materials prior to transport, or provide adequate freeboard (space from the top of the material to the top of the truck) to reduce PM_{10} and deposition of particulate during transportation. Remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter. To the extent feasible, route and schedule construction traffic to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

Noise and Vibration

For purposes of the National Environmental Policy Act (NEPA), noise abatement must be considered because Receptors have been identified as approaching or exceeding the noise abatement criteria by the design year of 2035. Based on the studies completed to date, Caltrans intends to incorporate noise abatement in the form of sound wall from R6 to R 12 (see Figure 2-4, which shows noise Receptors location). Receptors 6, 7, 8, 9, 10, 11 and 12 represent 7 single-family homes located on Corrine Street with the existing noise level range from 63 dBA to 65 dBA. The

predicted noise levels with the project range from 66 dBA to 69 dBA. To achieve a 5-decibel reduction, a sound wall 14-feet high and 550 feet long would be needed. The reasonable cost for this barrier is $315,000.

Biology

Since no kit fox habitat is being permanently removed as part of the project, no compensatory mitigation is being proposed. The proposed project would not induce urban growth, nor would it increase access to adjacent habitat. The concrete median barrier would be continuous, unlike the metal beam guard rail; however, it would contain openings at prescribed distances that would allow fox and other wildlife to pass. Although the existing den under the Pacheco Road Undercrossing would be temporarily impacted, because this den is atypical and in artificial habitat, the proposed project is not anticipated to have a measurable cumulative effect on kit fox populations. In addition to the modified design and limiting major components of the construction activities to the daytime, the following precautionary measures would be implemented to avoid and minimize impacts to kit fox: at the end of each working day the contractor would take measures to prevent the entrapment of San Joaquin kit foxes in all excavated, steep-walled holes or trenches. These measures would include covering excavations with plywood or providing dirt or plank escape ramps. The contractor would also inspect all pipes and culverts before burying, capping or other activities. If a San Joaquin kit fox is discovered during this inspection, the pipe or culvert would not be disturbed (other than to move it to a safe location if necessary) until after the fox has escaped. The contractor would immediately notify the engineer if a dead, injured or entrapped San Joaquin kit fox is found. All construction activity within 200 feet of the kit fox would be halted and may not resume until the engineer provides written authorization. Any entrapped kit fox would be permitted to escape. No injured or dead kit fox may be handled or otherwise disturbed. Prior to the initiation of groundbreaking a Caltrans biologist would conduct an education and training session for all construction personnel. All individuals who would be involved in the site preparation or construction would be present, including the project representative(s) responsible for reporting injuries or deaths of animals to Fish and Wildlife and State Fish and Game. Training sessions would be repeated for all new employees before they begin work at the project site.

In addition to these precautionary measures, pre-construction surveys within the project area would be conducted no more than 30 calendar days before construction starts in accordance with the most current protocols approved by the U.S. Fish and Wildlife Service and California Department of Fish and Game. On June 17, 2011, the U.S. Fish and Wildlife Service concurred that the proposed project is not likely to

adversely affect San Joaquin kit fox (see Appendix F U.S. Fish and Wildlife Service Letter).

Appendix E Comments and Responses

This appendix contains the comments received during the public circulation and comment period from May 15, 2011 to June 17, 2011. A Caltrans response follows each comment.

Comments from the State Clearinghouse

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

June 17, 2011

John Thomas
California Department of Transportation, District 6
2015 E. Shields Avenue, Suite 100
Fresno, CA 93726

Subject: South Bakersfield 8 Lane Widening
SCH#: 2011051048

Dear John Thomas:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on June 16, 2011, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Response to Comments from the State Clearinghouse

The State Clearinghouse letter acknowledges that Caltrans has complied with review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Comments from the City of Bakersfield Public Works Department

BAKERSFIELD

PUBLIC WORKS DEPARTMENT
1600 TRUXTUN AVENUE
BAKERSFIELD, CA 93301
(661) 326-3724

RAUL M. ROJAS, DIRECTOR • CITY ENGINEER

June 13, 2011

Mr. John Thomas
Acting Branch Chief
San Joaquin Valley Analysis Branch
Caltrans Environmental Planning
2015 East Shields Avenue, Suite 100
Fresno, CA 93726

Subject: South Bakersfield Eight-Lane Project on State Route (SR) 99,
from SR 119 to Wilson Road Overcrossing
Initial Study with Mitigated Negation Declaration

Dear Mr. Thomas:

The City of Bakersfield has completed review of the above-mentioned environmental document. The proposed project includes the construction of two 12-foot wide lanes to be built in the median area (one lane in each direction) on SR 99 from SR 119 to the Wilson Road Overcrossing. The project also includes 10-foot wide paved inside shoulders and a concrete median barrier. All construction work would be within the existing state right-of-way and localized within the median area. The existing oleander plants in the median would be removed. In addition, the Pacheco Road undercrossing and the South Bakersfield Overhead over the BNSF railway would both be widened.

The City of Bakersfield is fully supportive of this project and these roadway improvements. The City does not have any comments and we thank you for the opportunity to review the environmental document.

If you have any questions regarding this letter, please contact Ted Wright of this Department at (661) 326-3700.

Sincerely,

Raul Rojas
Public Works Director
City of Bakersfield

Cc: Honorable Mayor and City Councilmembers
Alan Tandy, City Manager
Theodore Wright, Thomas Roads Improvement Program (TRIP)

Response to Comments from the City of Bakersfield Public Works Department

Thank you for your comment on the project. Your support of the proposed project is acknowledged.

Comments from the California Public Utilities Commission-Rail Crossings Engineering Section

STATE OF CALIFORNIA — EDMOND G. BROWN JR., *Governor*

PUBLIC UTILITIES COMMISSION
320 WEST 4TH STREET, SUITE 500
LOS ANGELES, CA 90013

June 16, 2011

John Thomas
California Department of Transportation
2015 E. Shields Avenue, Suite 100
Fresno, CA 93726

Dear Mr. Thomas:

Re: SCH 2011051048; South Bakersfield 8 Lane Widening (State Route 99)

The California Public Utilities Commission (Commission) has jurisdiction over the safety of highway-rail crossings (crossings) in California. The California Public Utilities Code requires Commission approval for the construction or alteration of crossings and grants the Commission exclusive power on the design, alteration, and closure of crossings.

The Commission's Rail Crossings Engineering Section (RCES) is in receipt of the *Notice of Completion & Environmental Document Transmittal- Mitigated Negative Declaration* from the State Clearinghouse for Caltrans' project proposing to widen the existing State Route 99 from six lanes to eight lanes by adding one lane in each direction, all within the existing state right-of-way including over a San Joaquin Valley Railroad Company (SJVR) grade separation.

Modifications to crossings including widening of an existing grade separation, are within the scope of Commission General Order (GO) 88-B: "Rules for Altering Public Highway-Rail Crossings." A request for authorization must be submitted to RCES. One of the primary prerequisites for a GO 88-B request is concurrence of all parties (railroad, local agency and Commission) to the proposed changes.

Caltrans should arrange a meeting with RCES, and SJVR staff to discuss relevant safety issues and requirements of a GO88-B request for authority to modify the existing overpass (CPUC crossing # 103BT-319.30-A, U.S. DOT # 750987D).

If you have any questions, please contact Sergio Licon, Utilities Engineer at sal@cpuc.ca.gov, 213-576-7085, or me at rxm@cpuc.ca.gov, 213-576-7078.

Sincerely,

Rosa Muñoz, PE
Senior Utilities Engineer
Rail Crossings Engineering Section
Consumer Protection & Safety Division

C: Victor Castillo, SJVR

Response to Comments from the California Public Utilities Commission-Rail Crossings Engineering Section

Thank you for your comments on the project. The Central Region Real Property Services and the District 6 railroad coordinator will be submitting a request for authorization to the Commission's Rail Crossings Engineering Section during the the design phase of this project.

Comments from the Native American Heritage Commission, page 1 of 5

STATE OF CALIFORNIA — Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

June 6, 2011

Mr. John Thomas, Environmental Planner
CALIFORNIA DEPARTMENT OF TRANSPORTATION – DISTRICT 6
2015 E. Shields Avenue, Suite 100
Fresno, CA 93726

Re: SCH#2011051048 CEQA Notice of Completion; proposed Mitigated Negative Declaration for the: **"South Bakersfield 8 Lane Widening Project"** Located in the City of Bakersfield; Kern County, California

Dear Mr. Thomas:

The Native American Heritage Commission (NAHC), the State of California 'Trustee Agency' for the protection and preservation of Native American cultural resources. The NAHC wishes to comment on the above-referenced proposed Project.

This letter includes state and federal statutes relating to Native American historic properties of religious and cultural significance to American Indian tribes and interested Native American individuals as 'consulting parties' under both state and federal law. State law also addresses the freedom of Native American Religious Expression in Public Resources Code §5097.9.

The California Environmental Quality Act (CEQA – CA Public Resources Code 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. The NAHC Sacred Lands File (SLF) search resulted in; **Native American cultural resources were not identified** within the 'area of potential effect (APE), based on the USGS coordinates of the project location provided. However, there are Native American cultural resources are in close proximity to the APE. The NAHC "Sacred Sites,' as defined by the Native American Heritage Commission and the California Legislature in California Public Resources Code §§5097.94(a) and 5097.96. Items in the NAHC Sacred Lands Inventory are confidential and exempt from the Public Records Act pursuant to California Government Code §6254.10.

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries of cultural resources or burial sites once a project is underway. Culturally affiliated tribes and individuals may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We strongly urge that you make contact with the list of Native American Contacts on the attached list of Native American

Comments from the Native American Heritage Commission, page 2 of 5

contacts, to see if your proposed project might impact Native American cultural resources and to obtain their recommendations concerning the proposed project. Pursuant to C"A Public Resources Code § 5097.95, the NAHC requests that the Native American consulting parties be provided pertinent project information. Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). Pursuant to CA Public Resources Code §5097.95, the NAHC requests that pertinent project information be provided consulting tribal parties. The NAHC recommends *avoidance* as defined by CEQA Guidelines §15370(a) to pursuing a project that would damage or destroy Native American cultural resources and Section 2183.2 that requires documentation, data recovery of cultural resources.

Furthermore we recommend, also, that you contact the California Historic Resources Information System (CHRIS) California Office of Historic Preservation for pertinent archaeological data within or near the APE, at (916) 445-7000 for the nearest Information Center in order to learn what archaeological fixtures may have been recorded in the APE.

Consultation with tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA (42 U.S.C 4321-43351) and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 *et seq*), 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq.* and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation.

Furthermore, Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery'.

To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. Regarding tribal consultation, a relationship built around regular meetings and informal involvement with local tribes will lead to more qualitative consultation tribal input on specific projects.

The response to this search for Native American cultural resources is conducted in the NAHC Sacred Lands Inventory, established by the California Legislature (CA Public Resources Code 5097.94(a) and is exempt from the CA Public Records Act (c.f. California Government Code 6254.10) although Native Americans on the attached contact list may wish to reveal the nature of identified cultural resources/historic properties. Confidentiality of "historic properties of religious and cultural significance" may also be protected under Section 304 of he NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places and there may be sites within the APE eligible for listing on the California Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APEs and possibility threatened by proposed project activity.

2

Comments from the Native American Heritage Commission, page 3 of 5

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Cc: State Clearinghouse

Attachment: Native American Contact List

3

Comments from the Native American Heritage Commission, page 4 of 5

California Native American Contact List
Kern County
June 6 2011

Santa Rosa Rancheria
Rueben Barrios, Chairperson
P.O. Box 8
Lemoore , CA 93245
(559) 924-1278
(559) 924-3583 Fax
Tache
Tachi
Yokut

Tejon Indian Tribe
Katherine Montes- Morgan, Chairperson
2234 4th Street
Wasco , CA 93280
kmorgan@bak.rr.com
661-758-2303
Yowlumne
Kitanemuk
Kawaiisu

Tule River Indian Tribe
Ryan Garfield, Chairperson
P.O. Box 589
Porterville , CA 93258
(559) 781-4271
chairman@tulerivertribe-nsn.gov
(559) 781-4610 FAX
Yokuts

Kawaiisu Tribe of Tejon Reservation
David Laughinghorse Robinson
PO Box 1547
Kernville , CA 93238
(661) 664-3098 - work
(661) 664-7747 - home
horse.robinson@gmail.com
Kawaiisu

Ron Wermuth
P.O. Box 168
Kernville , CA 93238
warmoose@earthlink.net
(760) 376-4240 - Home
(916) 717-1176 - Cell
Tubatulabal
Kawaiisu
Koso
Yokuts

Chumash Council of Bakersfield
Arianne Garcia, Chairperson
P.O. Box 902
Bakersfield , CA 93302
(661) 836-0486
chumashtribe@sbcglobal.net
(661) 836-0487
Chumash

Kitanemuk & Yowlumne Tejon Indians
Delia Dominguez, Chairperson
981 N. Virginia
Covina , CA 91722
deedominguez@juno.com
(626) 339-6785
Yowlumne
Kitanemuk

Kern Valley Indian Council
Robert Robinson, Co-Chairperson
P.O. Box 401
Weldon , CA 93283
brobinson@lwvisp.com
(760) 378-4575 (Home)
(760) 549-2131 (Work)
Tubatulabal
Kawaiisu
Koso
Yokuts

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2011051048; CEQA Notice of Completion; proposed Mitigated Negative Declaration for the South Bakersfield 8-Lane Widening Project; located in the City of Bakersfield; Kern County, California.

Comments from the Native American Heritage Commission, page 5 of 5

California Native American Contact List
Kern County
June 6 2011

Tubatulabals of Kern Valley
Donna Begay, Tribal Chairwoman
P.O. Box 226 Tubatulabal
Lake Isabella, CA 93240
drbegay@aol.com
(760) 379-4590
(760) 379-4592 FAX

Santa Rosa Tachi Rancheria
Lalo Franco, Cultural Coordinator
P.O. Box 8 Tachi
Lemoore , CA 93245 Tache
(559) 924-1278 - Ext. 5 Yokut
(559) 924-3583 - FAX

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2011051048; CEQA Notice of Completion; proposed Mitigated Negative Declaration for the South Bakersfield 8-Lane Widening Project; located in the City of Bakersfield; Kern County, California.

Response to Comments from the Native American Heritage Commission

Thank you for your comments. In response to the June 6, 2011 letter from Native American Heritage Commission (NAHC), no response is necessary. In the event that unanticipated archaeological resources are encountered during construction, consultation with the tribes and the NAHC may be revisited.

Appendix F Concurrence letter from U.S. Fish and Wildlife Service

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
81420-2011-I-0401-1

JUN 17 2011

Mr. Zachary Parker
Branch Chief, Central Region Biology
California Department of Transportation, District 6
855 M Street, Suite 200
Fresno, California 93721

Subject: Informal Consultation on the State Route 99 South Improvement Project in Kern County, California (California Department of Transportation EA 0G8300, 06-KER-99-PM 17.0/22.1)

Dear Mr. Parker:

This is the U.S. Fish and Wildlife Service's (Service) response to the California Department of Transportation's (Caltrans) request for concurrence on the proposed State Route 99 South Improvement Project (project) in Kern County, California. Your letter, dated March 11, 2011, was received in this office on March 14, 2011. At issue are the effects of this proposed project on the federally-endangered San Joaquin kit fox (*Vulpes macrotis mutica*). Caltrans has determined that the proposed project may affect, but is not likely to adversely affect the San Joaquin kit fox, and requests concurrence with this determination. This response was prepared in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

The findings and recommendations of this letter are based on: (1) Caltrans' initial March 11, 2011, letter requesting concurrence; (2) the accompanying February 2011, *State Route 99 South Improvement Natural Environment Study* (NES); (3) electronic-mail (e-mail) and telephone correspondence between the Service and Caltrans between March and May 2011; and (4) other information available to the Service.

Project Description

Caltrans proposes to improve an approximately 5.1 mile (mi) segment of State Route (SR) 99 between the SR 119 interchange and the Wilson Road Overcrossing from post mile (PM) 17.0 to 22.1, located within the southern portion of the City of Bakersfield in Kern County. SR 99 currently exists as a six-lane highway in this area; the improvements will involve widening it to an eight-lane highway following the construction, in the median, of two additional 12 foot (ft.)

Continuously Reinforced Concrete Pavement (CRCP) lanes, one in each travel direction, and two 10 ft. inside-shoulders, also one in each travel direction. The current thrie beam barrier present in the median will be replaced with a concrete barrier bearing modified Type S wildlife passageway openings (See Proposed Avoidance and Minimization Measure #7). The project also proposes to widen two bridge structures within its limits, the Pacheco Road Undercrossing and the South Bakersfield Overhead.

According to the NES, no new right-of-way (ROW) will be required to complete the project and with the exception of the widening of the two bridge structures which will require the expansion of existing abutments and the addition of columns within the ROW, all proposed work will be contained within the median.

Several large Eucalyptus trees are present along SR 99 within the ROW; however, no tree removal is anticipated.

Potential staging areas likely will be located within the median. There are also two interchange loops within the project limits at Panama Lane and White Lane, which the contractor could use for staging. However, if no areas within the ROW are available for use, the contractor will have to secure its own appropriate site outside of the ROW.

As the project site is flat, the use of fill material is not anticipated. There will not be any anticipated utility relocations.

Though contingent on certain factors such as weather conditions and the presence of fog, construction is anticipated to begin between January and March 2013, and continue through October 2013.

Caltrans seeks to improve the level of service operation (LOS) for this segment of SR 99 in order to relieve traffic congestion and improve traffic operations and circulation; notably, by maintaining a LOS "D" or better (minimal delays and an operating speed of 62 miles per hour (mph)) throughout the design period to 2025, and a LOS "E" or better to 2030 (some significant delays and an operating speed of 53 mph).

Action Area

The action area is defined in 50 CFR § 402.02, as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." For the proposed project, the action area consists of the 5.1 mi segment of SR 99 hardscape, the parallel median space within which inside lane and shoulder widening activities will occur, and the ROW, consisting of ruderal/disturbed land (e.g. paved and dirt roads, open lots, roadside areas, and vehicle pullouts), in which the abutments and columns of two existing bridge structures will be widened, and potential staging and access areas will be located.

Proposed Avoidance and Minimization Measures

According to the NES and further discussion with Caltrans, Caltrans proposes to implement the following measures to minimize and avoid impacts specifically to the San Joaquin kit fox, as well as to other sensitive biological resources and species.

General Construction Best Management Practices (BMPs):

1. Erosion control measures will be designed to prevent the spread of invasive plant species.
    a. Construction equipment will be cleaned before mobilizing to the project site and before leaving the site to prevent the transport of invasive species on- or off-site.
    b. Although no fill is anticipated, any excess excavated materials generated from construction will be properly disposed of at a suitable location that has been cleared by a Service-approved biologist to ensure that the activity will not adversely affect the San Joaquin kit fox.

Migratory Birds:

1. Migratory bird special provisions will be included in the construction contract.
    a. If construction activities take place within the nesting season (approximately February 15 – September 1), preconstruction surveys will be conducted to ensure migratory birds and nests will not be affected. If individuals are located or active nests are found, the California Department of Fish and Game (CDFG) and the Service will be notified and no work will be permitted to occur within a 100 ft. radius until the young have fledged.
        i. If necessary, and prior to the beginning of the nesting season, exclusion techniques will be used to prevent migratory species from nesting on the Pacheco Road Undercrossing and South Bakersfield Overhead structures.
    b. A preconstruction survey will be conducted no more than 30 days prior to ground disturbance for active burrowing owl burrows. If an individual is located, the CDFG will be consulted and either the construction schedule will be altered or appropriate buffer zones created to ensure the species is not disturbed.

San Joaquin kit fox:

1. Pre-construction surveys within the project limits will be conducted no more than 30 calendar days prior to the start of construction in accordance with the Service's revised 2011 *Standard Measures for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance Construction and Operation Requirements.*
    a. To ensure no San Joaquin kit foxes are injured or killed by construction activities, a potential den found on the Pacheco Road Undercrossing abutment will be

monitored (documented in the NES); upon confirmation of inactivity, it will be blocked so that no individuals move into the den during project work. The temporary obstruction will then be removed following the completion of construction.

2. An employee education program will be conducted by a Service-approved biologist for all construction personnel prior to the beginning of construction; the program will consist of a description of the San Joaquin kit fox and its habitat needs, the status of the species and its protection under the Act, the conservation measures taken to reduce and avoid impacts to the species, and the penalties for not complying with biological minimization requirements. Training will be repeated for all new personnel before they access the project site.

3. Project-related vehicles will observe a 20 mile-per-hour speed limit in all project areas. Vehicle travel will be limited to established roadways except for new lane construction within the median.

4. Since the San Joaquin kit fox is most active at night, the majority of work will occur during the day, with the exception of k-rail placement and lane striping as limited activities requiring lane closure to be conducted at night for personnel and driver safety.

    a. If it becomes necessary for safety purposes to conduct the demolition of the Pacheco Road Undercrossing at night, a Service-approved biologist will be on-site during staging and demolition activities to monitor the potential San Joaquin kit fox den on the abutment.

5. All food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in closed containers and removed at least once a day from the entire project site in order to reduce the potential for attracting scavengers and predator species.

6. No firearms will be allowed on-site; nor will any pets be permitted on-site in order to prevent harassment to the San Joaquin kit fox or destruction of dens.

7. Modified S-Type semicircular wildlife passageways will be installed in the concrete median barrier at prescribed intervals of 150 - 200 ft. along its alignment in order to maintain road permeability and potential species movement. These openings will have a radius of nine inches so as to allow the San Joaquin kit fox and other wildlife species ample space to maneuver through.

8. To prevent the inadvertent entrapment of the San Joaquin kit fox or other species during construction, all excavated, steep-walled holes or trenches more than two ft. deep will be covered at the close of each work day or provided with escape ramps constructed of fill or wooden planks. Prior to any holes or trenches being filled, they will be thoroughly inspected for trapped individuals. Since the San Joaquin kit fox is also attracted to den-like structures such as pipes and may enter them becoming trapped or injured, all construction pipes, culverts, or similar structures with a diameter of four inches or greater

stored on-site will also be inspected for the San Joaquin kit fox prior to the structures being buried, capped, or moved. If a San Joaquin kit fox is discovered, that section of pipe will not be moved until the Service and the CDFG have been consulted and the San Joaquin kit fox is allowed to leave without harassment.

9. If a San Joaquin kit fox den is discovered during construction, all work activity within a 150 ft. radius of the den will be halted and the Resident Engineer will be notified immediately. The Service and the CDFG will be contacted for guidance as soon as possible.

10. A representative will be appointed by Caltrans who will be the contact source for any employee or contractor who inadvertently kills or injures a San Joaquin kit fox or who finds a dead, injured, or entrapped individual. The representative will be identified during the employee education program. If an individual is found, all construction activity within a 150 ft. radius of the San Joaquin kit fox will cease and the representative will be contacted immediately. Both the Service and the CDFG will be contacted within three working days of such incidents.

Determination

Caltrans has determined that the proposed project is unlikely to adversely affect the San Joaquin kit fox. With the exception of the abutment widening and column placement at the Pacheco Road Underpass and South Bakersfield Overhead bridges, project activities mainly fall within the boundaries of the inside median of the highway and within the disturbed ROW. According to the California Natural Diversity Database (CNDDB, 2011)[1], there are 14 records of the San Joaquin kit fox within the Gosford United States Geological Survey 7.5-minute quadrangle. Two observations dating from 2004 and 2006 are located within approximately 1.5 mi of the approximate center point of the action area; seven observations (five recorded since 2004 plus two historical records from 1975) are situated within approximately 5.5 mi of the approximate center point of the action area, encircling the site.

Despite the abundance of industrial, commercial, and residential land uses surrounding the action area, the San Joaquin kit fox is known to inhabit and utilize adjacent lands. There is also some non-native grassland habitat found adjacent to the action area limits as well. Considering the distribution of previously recorded San Joaquin kit fox observations around the action area, it is likely that the species can make use of movement corridors and is able to cross potential barriers like the highway.

The action area itself, however, is unlikely to provide suitable foraging habitat for the species. It may provide minimally suitable denning habitat in the area by the Pacheco Road Undercrossing abutments, since a potential den was observed on the northeast abutment. This den was discovered and monitored by Caltrans biologists on January 31, 2011. Located on a steep slope, it consisted of four entrances that potentially could have been used by the San Joaquin kit fox.

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[1] California Natural Diversity Database (CNDDB). 2011. Natural Heritage Division, California Department of Fish and Game. RareFind 4. Accessed March 30, 2011. Sacramento, California.

Three of these entrances were deemed inactive, since there were cobwebs and debris covering the openings but the remaining entrance appeared to be clear and was keyhole-shaped, a typical characteristic of San Joaquin kit fox dens. The biologists set up two Moultrie® digital game cameras to try to confirm potential den activity; cameras were in place prior to dusk and were left in-situ for approximately five hours. One camera was set up near the entrance of the active entrance while the other was setup at the toe of the abutment where several canid tracks were observed. No San Joaquin kit fox were observed and neither were any other species other than a feral cat.

According to information provided in the NES, the soil within the Caltrans ROW is not particularly friable, but is compacted; the limited vegetation present is routinely disturbed by disking, mowing and spraying for weed control. Similarly, the soil within the inside median is also compacted and dense stands of oleander shrubs (*Nerium oleander*) are grouped within the limits of the guardrails. While the existing median barrier allows the San Joaquin kit fox and other wildlife to potentially pass across the highway at any point that is not obscured physically or visually by the oleander shrubs, the proposed concrete median barrier will present a solid obstruction. It is possible that the proposed concrete design may create a barrier effect and lead to greater exposure to vehicular contact over longer periods of time for those species attempting to cross the highway. However, Caltrans' proposed installation of the modified semi-circular wildlife passageways, with expanded nine inch radial openings (increased from the more typical six inch radial opening design) placed at 150 - 200 ft. intervals along the median, will greatly aid in maintaining the permeability of this segment of highway.

Given the relatively small-scale scope of work, its confinement to the inside median and existing outer ROW areas, and the existing habitat conditions, along with the implementation of the proposed conservation measures, potential adverse effects to the San Joaquin kit fox will be reduced to an insignificant and discountable level. Caltrans has determined that despite the proposed abutment work near the potential den site and the temporary disturbance to ruderal land used as staging and access, the project ultimately will not decrease the amount of available San Joaquin kit fox habitat or the number or range of the species. Also, other than the West Branch Canal that connects to the Kern Island Canal and which runs under SR 99 just north of the Pacheco Road Undercrossing, no other water features are situated within the action area. The Kern River is located approximately three miles to the north of the action area's northern limits. Since no water features will be affected by project activities, no changes to drainage infrastructure, which may be used by the San Joaquin kit fox, are anticipated.

After reviewing the 2011 NES and other information sources, and discussing project aspects with Caltrans, the Service concurs with the determination that the proposed project is not likely to adversely affect the San Joaquin kit fox.

Closing Statement

This concludes the Service's review of the proposed SR 99 South Improvement Project and its consideration of the project's effects to the species. No further coordination with the Service under the Act is necessary at this time. Please note, however, that take of listed species is not

exempted from the prohibitions described under section 9 of the Act. We concur that the project as proposed is not likely to result in take, but if conditions change so that the project may adversely affect listed species, initiation of formal consultation, as provided in 50 CFR § 402.14, is required.

Please contact Jen Schofield or Thomas Leeman, San Joaquin Valley Division Chief, at (916) 414-6600 if you have any questions regarding this letter.

Sincerely,

Daniel Russell

Daniel Russell
Deputy Assistant Field Supervisor

cc:
Ms. Annee Ferranti, CDFG, Fresno, California

List of Technical Studies that are Bound Separately

Air Quality Report

Noise Study Report

Natural Environment Study

Historical Property Survey Report

Archaeological Survey Report

Hazardous Waste Memorandum

Asbestos and Lead-Containing Paint Report

Hydraulic/Floodplain Memorandum

Traffic Operational Analysis Memorandum

Water Quality Memorandum

Visual Study Memorandum

Paleontological Study Memorandum